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ON THE VALUE OF HUMANISTIC, PARTICULARLY CLASSICAL,
STUDIES: THE CLASSICS AND THE NEW EDUCATION

II. THE CLASSICS AND THE ELECTIVE SYSTEM

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Πτεροφνέω

My classical colleagues—whom I hold in due awe, knowing just enough to appreciate my dense ignorance in their field—have evinced no little temerity in summoning me to this assize. As for them, I can only suppose that they think philistinism an incurable disease, and that, hopeless, they revert to the consolations of philosophy. Unhappily, consolations are very like salt water: the more we slake our thirst, the thirstier we grow. So I issue fair warning.

"The Classics and the Elective System"! What shall I say? Shall I hark back to the benches of that distant Greek classroom, nigh forty years down the files of time, alas, and transcribe this early effort? "The Isles of Greece were always quarreling as to which was the birthplace of Homer. Chaos has the best right to claim him." Rather let me exclaim—

Exegi monumentum aere perennius—

"I have eaten a monument more lasting than brass," as a Glasgow student translated it on an auspicious morning; "then, for God's sake, sir, sit down and digest it," as Ramsay retorted

instantly. Worse luck, I must perform the operation on my "hind legs"; worse still, "*magna comitante cæterva*."

Why, the job's as bad
As if you tried by reason to be mad.

Like comets, earthquakes, trusts, suicide, and anarchism, not to mention other lambent phenomena, the elective system may be tracked to its causes. Whether these vindicate its existence were another question. For, as every Freshman philosopher discovers, it is one thing to justify the ways of God to men, another to justify the ways of men to God. Let me step in where Mr. Rand feared to tread. What a truncated business the knowledge of a century ago appears to us now. Given the eighteen bodies forming the solar system, with inertia and gravitation, it was possible both to tell and to foretell their positions relative to each other in space. Nothing had been learned of their physical constitution—the future held Kirchoff's happy birth. In the same way, chemistry was just breaking the bonds of the phlogiston legend, sorry recriminations resounding. Gelatine was believed to be the febrifuge agency in quinine, while otherwise the less said of the "sciences" of medicine, physiology, and the rest, the better. The surprise bath—tumble the patient from a high tower into an icy tub—was prescribed as a remedy for insanity, on the principle that like cures like, I presume. Further, if these marvelous fribbles characterized nature-study, the notions entertained about man, in his total structure and history, might well be described by Terence's line: "Better or worse, help or hurt, they see nothing but what suits their humor." Even Heine, as you Grecians remember, could only gird at F. A. Wolf—his greatest title to fame. But a profound revolution had set in.

Thereafter followed (1) the extension and almost complete transformation of mathematics and the physical sciences; (2) the growth and progressive subdivision of the biological sciences; (3) the organization and startling ramifications of the human sciences; (4) inventions—the application of the new knowledge in engineering, commerce, manufactures, and the immense multiplication of practical outlets. As a consequence,

numerous subjects forced their way into the curriculum. It were superfluous to specify, but, as everyone is aware, unprecedented enlargement ensued. At length, as has been alleged, so bemused did we become by the very wealth of our own successes, that we abandoned the problem of higher education and clambered into the elective automobile—the omnibus being voted too slow—recking not of destination. Having little Latin, we had never heard Seneca's comment: "Among other evils, folly has this special peculiarity: it is always beginning to live." In a word, the tried education went by the board, adjudged inadequate or even "sterile." Such was the first stage.

The sequel next, an oft-told tale that runs somewhat thus. "The world of our habitation had changed so radically that we attributed a parallel transformation to man. So, without much reflection, we presumed that any boy or girl, at nigh any age, might study anything with advantage. The idea flourished luxuriantly within the university. Pursuits permissible to the graduate, after extensive preparatory *drill*, seeped into the undergraduate college. Pathetic spectacles ensued. The goddess fled our altars, because the high mass of the human spirit had fallen into desuetude. Like his prototype, the political parson, the wire-pulling professor served other deities. We were midmost a sorry comedy, of the kind that takes its rise in the second-rate. Talk about culture, and other precious possessions, had displaced the fact. Horizons had been destroyed. The arts faculty, in particular, had gone to pieces—what did it import after all? The professional school alone provided a center of real 'work.' In these days every inhabitant of Israel did as seemed good in his own eyes. And now we are wondering—wondering why these things be!" We may take this indictment as we please, the patent truth is, some very serious problems are upon us, and we cannot, indeed dare not, evade them. Blink it as we may, trumpet our numbers and appliances as we choose, a fateful situation exists relative to the future.

The elective system and classical studies belong to the arts faculty. Therefore I am restricted to this aspect of higher

education. Fortunately the limitation renders the subject less hopeless and unmanageable, even if the undergraduate jungle be thick. Further, I must address myself to the select class of reasonable and, above all, independent men, leaving my hearer to fit the cap. For I do not propose to manipulate statistics, although I have them—this were too easy. On the contrary, I desire to arouse reflection.

As I see it, the problem presents two phases. (I) Remembering that we are to consider the mother faculty alone, we cannot ask, What is a university? But we must inquire, What is the condition requisite for the continued efficiency of higher education under present circumstances? (II) This immediately raises the pendant question, What arrangements are most likely to realize the aim contemplated?

I

It is tolerably plain that any plan worthy the name "educational" implies a definite purpose. This may be easy or difficult to discern; without it, education can hardly exist. What, then, is *our* plan? We may assert, first, that it is not the German idea. No matter how some may complain that we have imitated Germany, we have not reproduced her system; our secondary schools are not designed to prepare "maturity-examination" material. The arts college makes no pretense of producing the most accurate scholars imaginable, or the best-disciplined experts in pure science. The intellectual aim has not contrived to subordinate every other. Whether we congratulate or bemoan ourselves, we are bound to recognize the fact. Nor can we be said to follow the French. Numerous posts under government, attainable only after successful trial in competitive examinations *ad hoc*, exert no influence over the American university. We know next to nothing of the severe apprenticeship demanded by them. We cannot realize the meaning of an academic test that anchors a man securely in a superior class. Once more, thanks to social contrasts, we have drifted far from English practice. The very name, "public school," indicates why. With us a public school is an institution supported by popular taxa-

tion, providing instruction free or at nominal charges, on the ground that this is a necessity if we are to develop "intelligent citizenship." With the English a public school is an expensive private school maintained to provide from the "directing classes" men who may be trusted to serve the empire in responsible capacities or to perpetuate this type of training. Consequently the colleges of Oxford and Cambridge are in many respects continuations of the public schools. There is no such break between school and university discipline in England as in the United States, or even in Germany. Nevertheless the American boy "goes to *school*" at Ann Arbor, Chicago, Iowa City. In contrast with these other countries, our purpose is expressed frequently in the somewhat vague phrase, "preparation for life." Vague, I say, because life happens to be fluid and equivocal, especially in this new land of kaleidoscopic shifts and manifold experiments. So the statement bristles with possibility of quibble. What better proof of this could we desire than the existence of the elective system itself?

Now, if you ask me—as you must here—to attempt an interpretation, I am compelled to raise certain questions. On the one hand, Do we mean education to mold life? On the other hand, Do we intend life to dictate education? Or, combining both, Are we interested more in the quality of person whom we produce or in the niche which he will fill, perchance, the moment he escapes the campus? Let us be quite frank, and make the confession that is good for the soul. If we thus confront the reality, the dilemma solves itself, of course. We allow life to dictate education, and material life at that. We dote on the "position," we reflect very little on the man. Our foremost thought is vocation; we even have difficulty in grasping the bare import of avocation. We plagiarize from the world of utility, and are so insensible of our debt that we plume ourselves on the "originality" of our system, and flaunt it before foreigners as a model. We figure our pupils as eventual pedagogues, clerks, salesmen, journalists, landscape-gardeners, library-assistants, and so forth. It seldom occurs to us that, first and foremost, they are, and must continue, human beings,

and that our prime responsibility is to inoculate them with an estimate of life commensurate with this, their privileged calling. Our education follows, it does not lead, our practice. Hence the jibes that swarm round our devoted heads today. And the elective system is nothing more nor less than the principal form in which utilitarian accommodation levies blackmail upon our universities. It exhibits compromise on a big scale. Now compromise is weakness or indecision. And as both parties to it—our life no less than our education—lack definite backbone, the equivalence of interests resultant were surely something to consider critically rather than to flourish as a paragon of perfection. Anarchy *plus* the bread-basket offers a curiosity in ideals! At all events, I am acquainted with but a single defense for our "educational" purpose. You may take it or spurn it as you prefer. Opportunism is the one "system" of life that has carried conviction to men who never go through the labor of consecutive thought. So far, then, the outcome is a stalemate.

But, by implication, I have hinted the true purpose of any such education as an arts faculty can give and retain its reason for being. If I be not wide of the mark, the tide of our contemporary routine is set, and set decidedly, against originality. Unluckily, nobody can be held accountable for this deplorable state of things. It has ensued naturally upon an expansion too rapid to escape muddle. On the contrary, the fundamental aim of an arts faculty is precisely to elevate intelligence above all else, to make men thoroughly pervious to ideas. For the primary condition of efficacious higher education is intellectual resilience, widely diffused, constantly active, and, beyond everything, mobilized upon definite points of spiritual attack. The things of the mind, not as the decorative appanage of a favored few, not as a private concern of a professional guild, but free to the whole people, familiar equally to the poor and to the rich—these uplift, sustain, and anneal. I declare emphatically that this process and result, and nothing but this process and result, constitute higher education. Remember, I have no reference to portentous learning, to recondite information, or

the like, but to education—a certain quality induced in men, which enables them to evaluate the issues of life as human beings should. With it, peoples may lay the potter's hand upon civilization; without it, they are fated to become a "scape in oblivion." What a flush of shame should suffuse our faces at the thought that, sometimes, the arts faculty has sunk to the level of a "bazaar or pantehnicon, in which wares of all kinds are heaped together for sale in stalls independent of each other"; and that, as an inevitable consequence, mental elevation has been displaced by the cant of the "up-to-date"—a naïve euphemism for the obvious. Why these terrible dangers? Because we have had little care to *think through* the indispensable condition of higher education. This is none other than conversion of spirit, a transformation of mind by mind, eventuating in disinterested anxiety for intellectual completion. Genuine appreciation, by a personality made alert and supple, is at once the condition and the outcome of higher education. Of this we can affirm with certainty, the education of man is the judgment of man. And an arts faculty finds its true reason for being, simply in constant reminder to the human spirit that it is ever outward-bound. We representatives of the humanities and the pure sciences are not here as hucksters of information, but as prophets of the Platonized intelligence that reproduces its own vision in those who are soon to transmit the cultural conscience of the nation. A tremendous responsibility; for, lacking this kind of conscience, independence, the fruit of sleepless vigilance, will wither.

There can be little doubt that superficialization, our scourge now, is due to confusion between education and encyclopedic instruction. It is a bane of pupal democracy, which never understands that individuals cannot make a people, that public spirit is important, not because it is public, but because it is spirit. Hence, in the care for immediate utility, according to *individual* hopes, intellectual virtue, as a *national* habit, has languished. Nor is any salvation likely under a system that stands for compromise on the cardinal points of unity and liberality. The tendency of the elective system has unquestionably been to level down in some studies, to foster luckless

irrelevancies and positive crudities, above all, to obscure the fundamental unity of the arts course by a feeble routine. Hours of credit, and idleness, are the alternatives it offers to not a few, and happy is he who contrives to grab both. Nothing could well militate more against the end which we arts teachers live to witness—power in perspective. We are here to enable humanity to control itself, not to prolong the day when “things are in the saddle and ride mankind.”

II

But how to accomplish our mission? Let us take an example, and reason from it to the underlying forces that mold it. Listen to these paragraphs. So far as I am aware, they were not written by a great scientific authority, nor by a prominent classical scholar, nor by a philosophical genius. But I do know that they bear the hall-mark of an educated man, of the kind who ought to be the distinctive glory of the arts course. He calls himself “Kappa”; he would rarely adorn Phi Beta Kappa.

Once more I look abroad from my study window, but this time with a different preoccupation. What I saw before—whether with the bodily or the mental eye—was a clot of matter orb'd in the turning-lathe of cosmic forces; swinging with headlong velocity round one of an infinite host of incalculably greater orbs; carrying with it an atmosphere of subtle and complex chemistry; swathed about with life-giving oceans; its crust built up and crumbled down by the patient energies of ten thousand ages; and clad as to its surface in a motley robe, woven of myriads of living, multiplying, and dying organisms, some of which, by an ultimate miracle, have broken loose from their roots, and move palpitating through the atmosphere, on wings, or hooves, or feet—or motor-bicycles. Now, as I look around, I fix my attention on another order of phenomena: those associated with the mental as distinct from the merely vegetative functions of the organisms which, in the absence of auxiliary mechanism, move on two feet. These creatures have somehow developed the power of remembering, grouping, abstracting, recording, communicating their sense-impressions; of distinguishing between the I and the Not-I; of using tools; of telling stories and singing songs; of forming societies, offensive and defensive, which are themselves elaborate organisms; of killing each other with weapons of far wider range than the tooth and claw of nature; of disputing

about the Whence, How, and Whither of life, and adopting theories for which they are willing to persecute or to die. . . .

From my point of outlook, then, what evidences do I see of the activities of this order of beings? I see men and women laboring the earth with various implements, some of them drawn by horses. I see a man on horseback inspecting and directing their work, and infer that he owes his place in the saddle to the fact of his having more money, and possibly more intelligence, than they. I see a large red-brick house, with classic pilasters and cornices, embowered in the ancient trees of a spacious and beautiful park. I know that it is not the home of the labourers in the field, nor even of the man on horseback, but of another man to whom he pays money for the privilege of using the land. At the same time I see people freely passing across this "property," thus showing that the community has certain prescriptive rights, even as against the lords of the soil. . . . By the roadside stands a village of about a thousand people, with one church, one school, three chapels, and fourteen public-houses. The church is many centuries old, and contains half-effaced brasses and tombs of knights in armour, with their ladies by their sides. Its architecture, its monuments, the doctrines preached in its pulpit, and the ritual conducted at its altar, are so many relics and vestiges, to the understanding mind, of the spiritual contests and compromises of two thousand years. . . . I can hear an express train thundering along the railroad on the other side of the valley. It is one of the greatest of world-highways, issuing out from a giant city, a nation in itself, and carrying men the first stage of their journey to the remotest regions of the globe. It passes by earthworks piled by races whose very names are forgotten; battlefields where the fate of dynasties was decided; glorious cathedrals, like arks left stranded on the hill-tops by the shrinking of a deluge of faith; volcanic chains of furnaces, sending forth pillars of cloud by day, of fire by night; and vast, clanging factories, where the forces that for aeons lay dormant in matter have at last been enslaved by man, and have in their turn imposed on him the fetters of an abhorrent thralldom.

On every square inch, in fact, of this portion of the planet, unnumbered generations of men have left their stamp; and it is even now the abiding-place of a generation which is battling—blindly and purblindly, in wisdom and in folly—with the thousand problems of its own and its children's fate. Its name—England—is writ large in the annals of mankind for the past thousand years. It is a treasure-house of great and inspiring, or humbling and chastening, memories. Love yearns toward it, hatred scowls at it. The burden of greatness lies heavy on it, and its sons are partakers in a tremendous responsibility; for it is one of the six or eight organized societies of men which must work out, in co-operation or in contest, the future of the race.

Through the open window floats the sound of a distant voice, and a nearer voice replies: "I am coming immediately." The first three words call up before the mind's eye the Baltic fenland or Frisian forest whence they were imported fifteen hundred years ago. The last word, more sonorous and stately, "sounds for ever of Imperial Rome." Its syllables were heard in the four-square village on the Palatine, and were familiar to the lips of Cicero and Caesar.¹

Now, these paragraphs tingle with intimation. Scan them even a little, and you will find that they convey at least five important truths. (1) The classics dare not continue to subsist upon a perpetual dream of possibilities. For (2) under modern circumstances an educated person must know something (a) of nature, meaning either the stable physical universe, or the living organisms illustrating "matter" in unstable equilibrium; (b) of man, meaning thereby man's significant creations—language, society, morals, literature and art, religion, and so on. (3) A human being cannot be held educated unless he possess ability to set the miscellany of acquisition in philosophical perspective, and thus to divine the internal affiliations of wayward facts. As Darwin put it, "no one can be a good observer unless he is an active theorizer." (4) Grasp of historical development is an essential condition of authentic knowledge, it makes little difference in what field. (5) Education itself is not a "subject," the *corpus vile* for some facile sciolist, but a state of the human spirit whereunto one can be baptized only by certain experiences, and primarily by intercourse with masters who incarnate it already.

The inference is not obscure. Unity and variety form the poles of our present pedagogical antinomy. As our national life grows more complex, whether by internal division or by immigrant increment, the more insistent becomes the call for an educational system designed to conserve its unitary *ethos*. On the contrary, as knowledge diversifies and vocations spawn, the greater the need to include typical "supporting" subjects; but also, mark you, the greater the futility of the counsel which urges anybody to "learn everything." The student is to know

¹ *Let Youth but Know*, 69 f.

something of nature, and everything of man; or everything of nature, and something of man. What an absurdity, of course! The intent plainly is, that he should be grounded in natural science so that he can appreciate its standpoint, method, and worth, whatever his predominating interest in humane studies, and *vice versa*; the case for all *Wissenschaft*, natural or human, is identical, as against seductive smattering. A broad outlook is imperative, or, as the editor of the *Westminster Gazette* says, the student ought to have "a reasonable equipment of practical knowledge, with a mind awakened to the interest and mystery of things, and free from that absorption in the trivial which is one of the worst signs of modern youth." His preliminary instruction cannot but be largely utilitarian, or disciplinary, and more or less in the nature of a "grind." The arts faculty must assume this, and take upon itself to test fitness in its own way. We may note in passing that at present it makes little pretense to search candidates, and as a result deliberately degrades itself to the level of a school. I presuppose that we shall cease to compete with preparatory institutions. I presuppose we grant that every student should learn the outlook of science, and this by means of courses designed for him, not for those who intend to specialize on the scientific side. Further, it is admitted that classical partisans were wrong in their efforts to limit "sound learning" to the languages of Greece and Rome. It is asserted that they were right in their insistence upon the pursuit of knowledge for its own sake. It is admitted that the supporters of science were correct in their proposal to adjust the curriculum to the vast extension of information. It is asserted that they were mistaken in their emphasis upon utility.

We are left, then, with the humanistic subjects, and with the aim of the arts faculty, to produce not "things," but persons in whom reason is exercised for insight upon materials which compel this quality. In a word, we have to consider the case of those students who will devote their main attention to man. A controlled elective system, with sane options for educational ends, as I have described them, is understood. At this point,

the situation begins to clear quickly. The human sciences are: (1) languages and literatures in their numerous ramifications; (2) historical studies in their many developments; (3) economics in all its branches; (4) philosophy, in part—for metaphysics, logic, and epistemology bear as much upon natural as upon human science. Each of these groups is interminably complex. Accordingly, the student who contemplates "expert" skill must devote his life to one, nay to a portion of this one. To be direct, only a fraction of those who elect the humanistic side will approach classical scholarship as a career. The classical men must recognize the fact, and adjust themselves to it. I would not presume to lay down a law to my colleagues here. But they might familiarize themselves with the question, What can we arrange for pupils who take our courses merely as supports, and with no thought of eventual mastery? I venture to hint that sometimes the problem has not been faced with the necessary frankness. For those who intend to become classicists, the classical departments have both the right and the duty to plan as they deem wisest on the basis of contemporary demands. But for the rest, the great majority, the needs of other subjects should be consulted carefully. This agreed, we cannot but recognize that classical studies furnish supports all round in a unique way. Without them, how are men to be philologists; to get at the inwardness of the English and the Romance tongues and literatures; to probe the beginnings of Western philosophy; to understand rhetoric; to learn the sources of English style; to handle great stretches of history; to follow the development of education; to trace the present position of jurisprudence; to uncover the growth of Christianity; to appreciate the scope of ethics; to fathom the drama, and a hundred other things? It seems inevitable, therefore, that, when we recover our sanity about educational values, we shall see a revival of the classics as an essential accessory. So I must record my agreement with that ideal "professor of education," Matthew Arnold:

I cannot help thinking, therefore, that the modern spirit will deprive Latin and Greek composition and verbal scholarship of their present uni-

versal and preponderant application in our secondary schools, and will make them, as practised on their present high scale, *Privatstudien*, as the Germans say, for boys with an eminent aptitude for them. For the mass of boys the Latin and Greek composition will be limited, as we now limit our French, Italian, and German composition, to the exercises of translation auxiliary to acquiring any language soundly; and the verbal scholarship will be limited to learning the elementary grammar and common forms and laws of the language with a thoroughness which cannot be too exact, and which may easily be more exact than that which we now attain with our much more ambitious grammatical studies. A far greater quantity of Latin and Greek literature might, with the time thus saved, be read, and in a far more interesting manner.²

The problem, then, is twofold—general and special. With regard to the *first*, whatever humanistic group a neophyte may elect, it is essential that he should be turned out a person to be reckoned with—an originating force. In other words, he must possess a nimble and full mind. This difficult, priceless acquisition depends upon individual effort directed toward material of a certain quality. I have indicated already from this platform³ why the classics excel for this purpose, and I need add little. It is fair to say, however, that youth needs perspective and a sense for relative values—never more than in these distracted times of ours. Now if my experience tell me anything—and eight thousand students are on my head, in two lands divided by many contrasts—it is this: sanity and insight cannot be obtained most readily and effectively from study of “modern” affairs. Inevitably, judgment suffers prejudgment here. For example, if I insist that Browning, alone among nineteenth-century poets, ranks with Homer, Dante, Shakespeare, and Goethe, many loud protests arise forthwith. Whatever his greatness, he is not a classic yet, and possibly he will never become classical. Nay, I in my turn, should be compelled to admit the contention of the psychologist, Rabier, that the Frenchman read-

² *Higher Schools and Universities in Germany* (1882), 171-72. Arnold has reference, of course, to the exclusive classical discipline of the great “public schools” of England, as they then were. But, *pari passu*, the passage bears upon our old “college” curriculum, and the remedy holds for any proposed rearrangement of the elective system on the humanistic side.

³ Cf. “The Nature of Culture Studies,” *The School Review* (1905), XIII, 441-57.

ing a page of a French author "only half grasps it." That is, author and reader jostle each other so that likes and dislikes destroy the balance. And what is true of literature holds of other human creations. Paul planted, Apollos watered, but God gave the increase. On the contrary, when you turn to the classics you find that these distractions vanish, you become consubstantial with the substance of your author. As Euripides has it, "the Greeks walk in light"; in this light we see light clearly. Lapse of time, and the happy fact that the greatest ancients could overlook the social "organism" as we never can, have sifted things unseen and eternal from things seen and temporal. By a magic that is yet no mystery, we feel the master's unerring touch. Need I do more than suggest that you compare the rivers of insipid stuff flowing from the modern "religious" press with the classical splendors of the Bible? I could name you men whom Nietzsche has turned into fanatics, aye, and, nearer home, men whom even the urbane Professor William James has turned into echoes. But I defy you to distil fanaticism or fashion from Plato and Thucydides, from Cicero and Livy. The classics are classical because in them, as concerns the intellect, we find the secret of eternal life. They illustrate, not the surface play of momentary events, at present so often mistaken for "history" but the constitutive operation of the human spirit, the same yesterday, to-day, and forever. They reveal the quintessential motive force of significant achievement; they lay a steady finger upon the permanent factors of civilization, brushing aside the petty nine days' wonders. Their appeal lies to reasonable and independent men, by the simple fact that nothing human is indifferent to them, the indifferently human abhorrent. Accordingly, when it comes to *the* condition for the continued efficiency of higher education—a mind

more and more

Personal, comprehensive of world-life—

the classics still furnish the surest guide to mastery in our own house. As a preparation for success in any humanistic study, as a preparation for maintenance of one's humanity, irrespective of one's vocation, they are, and must remain, incomparable. He

who runs may read the moral regarding their place in any elective system that could command rational confidence.

With respect to the *second*, classical representatives must have a care that some things do not get "between the wind and their nobility." With all diffidence, and fully aware of the manifold difficulties, I say to them that the great matter is to renew the nature of classical study for the average student. Surely there be persons, like Julius Caesar, events, like Thermopylae, principles, like that of the golden mean, fit to convince men of the import of their destiny. Surely exercises in unraveling the solutions of Greek and Roman affairs are admirable indices to our weightiest matters. Surely in these astonishing culminations, if anywhere, we may detect the nature of man's travail with himself in common, daily things. The clamant need is to pierce to the ideas and to the movements mediated by them. Remembering that the time is short, rapid and wide reading assumes prime importance. Put every aid at the disposal of the student, remove every obstacle to direct intercourse, and the sin of curious specialization that doth so easily beset. The depths and beauties of the authors clamor for appreciation. In some such way, the classics can perform inestimable service for the non-professional student and in the newest education. They enable him, first, to realize the winsomeness of literature and art. "In all Greek work," as Percy Gardner says, "whether poem or speech, history or sculpture, there is an evenness of development, a simplicity of motive, a beauty of outline, which cannot be found elsewhere." Second, they reveal the essentials for which man has ever struggled, will ever struggle. No other section of history is pregnant with such vasty issues as the millennium from Draco to Justinian. No fitful fever this, but a slow, regular, most momentous march. Stamp its real inwardness upon the nascent mind, attune to its wonder, and you have familiarized with the majesty of mortal effort. A cosmos looms athwart the soul, a cosmos set in rare perspective. What were the pulsating influences that rendered it so remarkable? Miss them, and you miss everything. Master them, and you are prepared for anything. A *Thathandlung*, as Fichte

expresses it, sends forth its penetrating challenge, deep calling unto deep. It is with this that the classical mentor of higher education must reckon, for the sake of other humanists, with no thought of himself or of his fenced corner. Thirdly, no other period of history has so enriched the common stock of human ownership. Greek literature, art, and philosophy; Roman government and law; Christianity;—produce a parallel inventory! Now, we non-classicists care little for the mere words that convey these mighty things. But we demand to know the matter face to face. Here be documents of a period, no doubt, fashioned thus and so; but what do they tell? We ask that formal erudition be accounted secondary for our nurslings. As has been well said, "disconnected from moral, social, and philosophical considerations, history, geography, and linguistics are still material sciences, just as physics or geology. And they have an additional inferiority in being not only much less scientific, but much less useful." Accordingly I conclude that you classical teachers occupy a position of unique advantage, because you can disentangle these "moral, social, and philosophical considerations" from technical accompaniments which, however final for you, for us are accessory. In a reformed elective system, with the classics as the most available foundation for all humanistic study, this attitude will spell deliverance from banality all round. I believe you are able to convert even our young barbarians to the conviction that in essence man is distinguished principally by the things of the mind. Admittedly, perhaps,

the times are not yet ripe
Save only mine and thine.

Yet,

know, the scheme
Of truth develops in man's absolute mind
With grade from false to true; the foregone truth
Turn'd false, the truth to come not yet ripe truth,
Save for those souls elaborate beyond

the elements in which they are immersed. You hold the key, not to a modicum of training or information, but to the most

educative chapter in the history of the race. We lesser humanists cannot forego your aid, as I have tried feebly to sketch it. Come over to Macedonia and help us, but help us according to *our* necessity.

"The classics in the New Education"! May a professed idealist speak a word of cheer? For a moment, under the stress of disconcerting change, men may debase self-study to the level of uselessness. But ultimately they may not doff their own reason. Thus they are compelled to return to investigations of human nature as the single means to solve human questions. *Lèse-majesté* may be dangerous now or then, *lèse-humanité* spells sheer suicide always. And if we conserve the arts which *Alterthumswissenschaft* reveals we shall never forget how to charm the gods of Olympus so that, as of yore, they may descend from their translucent heights, to make divine war on behalf of human mastery in human issues.

MODERN ENGLISH GRAMMAR¹

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A great many people seem to think that the study of grammar is a very dry subject indeed, but that it is extremely useful, assisting the pupils in writing and in speaking the language in question. Now I hold the exactly opposite view. I think that the study of grammar is really more or less useless, but that it is extremely fascinating. I don't think that the study of grammar, at least in the way in which grammar has been studied hitherto, has been of very material assistance to any one of the masters of English prose or poetry, but I think that there are a great many things in grammar that are interesting and that can be made interesting to any normal schoolboy or schoolgirl.

The chief thing is not to approach grammar from the side of logic or abstract definitions. What is wanted is to show that language is a living thing and what that means. When children begin to learn about cats and dogs they don't start with the definition of what a cat is or what a dog is, but they learn that this animal, which is very interesting to them, is a cat, and that this other animal, which is perhaps even more interesting to them, is a dog, and then perhaps after many years they will advance so far in their study of zoölogy that they would be asked in an examination the question, "How would you define a cat?" or "How would you define a dog?"—though I don't believe that even in the case of zoölogy you would think of asking that sort of question. Now, then, why should we start with definitions of nouns, adjectives, and verbs, and all these things? I don't see that there is any reason in that.

As I said, language should be considered as a living thing,

¹ A stenographic report of an *extempore* speech before the New England Association of Teachers of English.

or, rather, not as a thing, but as an activity, because that is really what language is. Language means speaking, and speaking means certain activities on the part of one man in order to be understood by other men. And what are these activities? Well, in the first place, of course, they are the activities of the organs of speech. Now, as grammar has generally been looked upon, these organs of speech play no part at all, or at any rate they are not the first thing to be mentioned. Grammar as usually taught is something dealing with printed words—not even written words, but printed words—whereas what we should deal with is the activity of man, the manner in which he shapes his lips and tongue, etc., in order to produce sounds which are capable of being heard by someone else and which are fit to convey thoughts and wishes and desires on the part of the speaker. This study of the first part of grammar can be made extremely interesting to boys and girls at a very early period. I know that from personal experience, and teachers of zoölogy and others, who really don't know much about language, also have told me that when they ask questions about such things as these, "How do you put your lips in order to produce such and such a sound?" "What do you do with your tongue?" etc., the attention of the children is aroused, and they find that they are able, without any difficult phonetic terms, to find out a good many things for themselves and to express them in their own way. I should take that as the basis of the study of the mother tongue or of any other tongue, and make everything as inductive as possible by making the pupils find out as much as possible for themselves. I think that there is a very fruitful field that has been very much neglected.

I am not, however, speaking so much about that, because that part of the subject has not been discussed today at all, but about the other parts of language—meaning, function, and form. What do I mean by looking upon those as parts of a living thing, a living activity? Well, there is a very good expression by Alexander Ellis that always has made a great impression on me. He says: "At last language study began, but unfor-

tunately it began with the wrong end; that is to say, it began with Sanskrit." Historical grammar began with the study of Sanskrit; it should have begun at the other end, and the other end is living individuals speaking and wanting to express their thoughts and feelings to their fellow-men. If we look upon language as an activity, and not as dead letters, we shall find a great many things of interest that have been neglected in the ordinary grammars. The subject is so vast that I shall only be able to touch upon a few things here.

There is one thing, I think, which any child could be made to understand, and which is very important; that is, the difference between formulas and free expressions, as I call them. Some things in language—in any language—are of the formula character; that is to say, no one can change anything in them. When you take such a phrase as "How do you do?" it is entirely different from a phrase like "I gave the boy a lump of sugar," or anything like that. In "How do you do?" everything is fixed. You cannot change it. You cannot even change the stress, saying "How *do* you do?" or make a pause between the words. It is one fixed formula, and has to be handled as such, unchanged. In the other case you have free expressions, which can be changed. Instead of "I gave the boy" you might say, "She gave the girl," etc. You may take any word out of these free expressions and substitute another one. And there the activity, the language-creating activity, of the individual comes in.

Any sentence except those that are fixed formulas the speaker has to create, at the moment when he is speaking, and in order to do that he utilizes certain types of thought that he has acquired from what he has heard before. The child hears a great many sentences of the same type, and then he creates new ones of the same type, even without knowing that he is creating anything at the moment that he is speaking. And this distinction pervades the whole field of language. In morphology or accidence we have on the one hand formulas, that is to say, forms that have been handed down by tradition, from generation to generation, and that are not created afresh,

because they are so fixed that no change is possible. Take irregular plurals, like "men" and "women." These are not created every time that they are used. On the other hand, we have regular formations by means of the ending "s," which can be added freely to any substantive for which we have no formular plural, thus also to all new words that come into the language. When the child says such a word as "sticks" or "automobiles" or "kodaks" for the first time no one can tell whether he has learned that form or whether it is something that he is just now creating on the analogy of other forms that he has heard.

Or take English compounds. There are some of these, like "husband" and a great many others, that are handed down traditionally and that are taken as wholes, but any man may make and, as a matter of fact, does make in every hour of his existence new compound terms, such as the "speed mania," "the trust bill," a "high grade neckwear," an "open-air class." And in that way I think we can explain a great many things so as to show that language is not in every respect something that is fixed and immutable, but that all these individual creations that have to be made every moment by the speakers tend, or may tend, to change the language. Those new forms that in historical grammars are called analogical formations have arisen in that way; but very often the same forms, the same expressions, that have been used a great many times before, are constantly re-created by speakers on the spur of the moment.

Or take such things as English stress. Here, too, we find that a great many words are handed down traditionally—we have traditional stress in them. But in many other cases people fashion the words at the very moment when they want them, and therefore they may very often change the stress according to such types of stress as are found in the language. Adjectives in the ending "-able" or "-ible" as a rule have the stress on the fourth syllable from the ending. This is due to the rhythmic principle that the vowel which is one syllable removed from the original French stress-syllable has secondary stress. Thus we have "déspicable," originally "despicáble," with a strong stress

on "a," and "cômparable," "lâmentable," "préférable," "considérable," etc. In some of these, but not in all, the stress is on the same syllable as in the word from which the word is derived. But very often a speaker would be simply thinking of the verb and then add the ending "-able," and that would lead to a different accentuation. Thus we often see two conflicting pronunciations: "âceptable"—the old rhythmic form, is found in Shakespeare and other poets and is still used in the reading of the Prayerbook, but generally the word is pronounced "accéptable"; we have "réfutable" and more commonly, "refútable"; "réspectable" formerly, but now always "respéctable." Shakespeare and Spenser have "détestable," but that has been supplanted by "detéstable," which is Milton's form. In the case of "admirable," the new form, "admírabable," has been less successful in supplanting the old "ádmirable," but in a great many adjectives, analogy, that is to say, free formation, has prevailed entirely—"agréable," "dépíorable," "remárkable," "irrésistible," etc. That is just one instance to show that not everything is fixed. I think such instances as these might be taken from various parts of grammar to show the pupils that English is living, and not consisting of a set of fixed rules, handed down and immutable forever.

In any part of grammar I think the first thing would be to make the pupil find out for himself some facts about his own language. Ask him how in English the distinction is made between one or more, and let him find out some instances himself. Take words like "table"—if there is more than one table you say "tables." Then I should ask him to classify the endings or various changes found to express "more than one." He would notice "oxen" without being able to find any other instance of that ending; but then he finds "children," and he sees that beside the ending we have a distinction in pronunciation between "child" and "children." I think he will be able in many ways to classify these things for himself, and he will do that without having learned any definition of plural or singular, or any definition of the noun or the adjective, or anything like that.

Then you may go on, I think, to say, "Well, now take 'man' and 'men' and 'woman' and 'women,' and add 'old': 'old man' and 'old woman,' 'old men' and 'old women.' Is there any difference there in the form of 'old'?" The pupil will easily find out for himself that there is none. And we may go on like that through various parts, and make him find out that we say "he goes," but "we go." Then you will ask him what is that distinction. He will find out that it is the distinction between the verb in the singular and the verb in the plural. And then you will say, "Is it always like that? Do we always add 's' to the singular?" And he will find out that if we say "I go" or "you go" there is no such "s," and that in "I went" and "we went" the verbal form is identical.

I think a great many of these things can be worked out inductively at a very early age, and that they will interest the children much more than definitions of parts of speech, etc.—definitions which, by the way, are always imperfect and will vary from one book to another, because even the authors of the best textbooks cannot define these things.

One of the speakers said that it was easy to make a child understand such a definition as this: "A noun is a name." I was very glad to hear one of the other speakers say that this is a very bad definition, because all the verbs also are names—the names of activities or states, etc.—just as well as nouns are. This shows that we should be careful not to give too vague definitions. Some definitions really tend to confuse the minds of the pupils.

No one can really define what a substantive is or what a verb is, in a satisfactory manner, and too much work has been wasted, I think, in writing textbooks and in teaching from textbooks which lay great stress on such valueless definitions. The essential thing is to find out the facts of the language, the forms used to express such and such a thing; and then you may compare these forms with the means of expression found in other languages.

If the pupil knows anything about German or Latin he may of course compare the manner of forming the plural there with

the manner of forming the plural in English, and he will find out that the rules in English are much easier and simpler than those found either in German or in Latin. Then you may tell him something about the earlier stages of English, without teaching him Anglo-Saxon grammar. Just tell him that formerly the system of English accidence was much more complicated than it is now; give him a few examples of older forms, and point out that some words have retained traces of this more complicated system—for example, in the very forms that the pupil has found out for himself as being irregular, such as “men,” “women,” “oxen,” “children.” He will now be prepared for such a question as this: “Why do you think that just these words, and not other words, are irregularly inflected? Why should it be like that?” The pupil will see that these words are the most ordinary words, the words in most common use, that come up much more frequently than the plural of “kodak” or “automobile” or “association,” etc. He will easily understand that the child in acquiring his mother tongue will hear these irregular forms much more often and at a much earlier age than the plurals of such words as “oak” or “book” or “friend,” and that that is one of the reasons why they are kept up so faithfully from generation to generation, while less frequently used words cannot easily retain irregularities. “Oak” “book,” “friend” formerly had irregular plurals, but are now regular. I think a great many such things can be made intelligible to the pupil, and will prove immensely interesting to him, and also fruitful for him, not exactly for his expression in English—I don’t think that that would be improved very much by that study—but for his general understanding of the world in which he is living; because, after all, human speech is an extremely important factor in the life of us all. I don’t lay much stress on terminology, and I think that most of those things in grammar that require a learned term to be taught are of no value at all. They will not help the pupil to understand the wonderful mechanism that he has in his own language.

Word order is another subject that may be treated with advantage. In many cases word order is fixed; then we have

a sort of formula. But in many other cases word order is to be determined in each particular case by the speaker himself. He may arrange his words in one order or in another. He may take the indication of time first and the subject afterward, or he may take the indication of time after the subject, or even after the verb. It will be easy to show that sometimes the arrangement is made quite mechanically, but that in other cases the individuality of the speaker comes into account, and especially his individual needs at every moment. Why does he sometimes place the indication of time first, and sometimes at the end of the sentence? An intelligent pupil will be able to discover that sometimes one thing is more important to what has to be said than at other times, and that therefore some things will in one sentence be placed first and in other sentences be expressed as a kind of afterthought because the speaker after having told about something comes to think that it will be important also to indicate at what time it happened.

The next step will be to show that word order very often is expressive. Sometimes the change is only one of style if you shift the position of some particular word; in other cases it would change the whole meaning, and is thus seen to be a grammatical device, as when "John beats Peter" means something different from "Peter beats John." Some things about the relation between various linguistic means, such as case forms, stress, word order, and the passive construction, may be brought into play, I think, very intelligibly to even those 96 per cent of the pupils who are spoken of as never entering college.

Why not show also how some of the grammatical means used in our language are at times insufficient? In most cases when we add an "s" to a substantive it shows either the genitive case or the plural; but if we have to express the genitive of the plural, how then? The pupil will find out that he has only the same "s" to express that. But then you may call his attention to the fact that because such a form as "prince's," "the prince's carriage," is ambiguous in the spoken language—that is it might be taken either as a singular or as the plural (prince's or princes')—there is a great tendency to use the periphrastic

form in the plural (the carriage of the princes). But you need not use the word "periphrastic." And you might, I think, go through whole volumes of English literature without finding more than one or two genitive plurals in "s." So here the very simple system of expressing the plural and the genitive by means of the ending "s" is sometimes deficient and has to be supplemented by other means.

Or take the distinction in word order between "I had it made" and "I had made it." This too is in most cases efficient enough, but in some cases it breaks down. The distinction is made by the position of the object, but if one has to place the object first, as when it is a relative or an interrogative pronoun, we seem to have no distinction between "the shoes which I had made" in one and in the other sense. But I think that the pupil may be led to discover that there is really a means of indicating that distinction, namely, stress—"had" being totally unstressed and run together with "I" in the second signification, but not in the first. There are a great many neat little things of that order, which are scarcely ever mentioned in the usual grammars, because these are all more or less made on the pattern of dead languages known only from books, and therefore leave out much of what can be discovered by the ear only.

I think, then, that there are a great many things in English grammar that could be made interesting and that could be taught in such a way that the pupil himself would be active all the time in finding out interesting things that he uses in his own speech instinctively without knowing it. In a great many cases he may be made to see not only the fact, but also the reasons why it is so; and those other things in English grammar which he can't be made to understand in that way I think we had better let alone.

Now I should like to say just a few words about terminology, as that has been discussed here today. I was very sorry to hear that the English committee on terminology has decided to use such terms as accusative and dative cases in English, because I think it is entirely wrong. No case distinctions should be allowed except those that find an expression in form somewhere in the

English language. A case need not be formally distinguished in all words, but in order to be acknowledged as a case in English grammar it must exist as a separate form in the language; and accusatives and datives have no longer any such existence in the English language. There is no accusative, there is no dative, in English. Both these old forms have disappeared, as well as the old English instrumental. If we are to speak about a dative and an accusative I don't see why we should not speak about an instrumental and an ablative and a great many other cases. If we say "I go that way," why not call that a locative, and if we say "I shall leave this afternoon," why not speak of that as a temporal case? There is no end of cases in English if we admit the accusative and the dative which have disappeared from the English language.

Now, if we take the accusative and dative as one case, the question arises what to call it. The name "objective" has been found fault with because the case is not always used as the object. I do not think that that objection is really valid, because names must be taken from some function or other. In many cases I think we have to choose terms that say very little indeed, because it is quite impossible to find terms that will comprise everything or that will suggest a complete definition. We must take what is the most important function, and say that there are some things which are not exactly covered by that, in the same manner as we have in ordinary practical life a great many names of objects which are really inadequate and don't describe everything that might be predicated about the thing in question. The name "adverbial" was proposed, but I think that is just as faulty as "objective." It would tend to create some confusion with "adverb"; and then a noun or a substantive in that case of which we are speaking is not always adverbial. It is very often found, for instance, after a preposition. Hence, after all, I should prefer either the name "objective" or else the name "oblique." Such a term as "oblique" is really a very good expression, because the only thing that it shows is that the case is different from the nominative, and that is all that we want to know.

If I should give you some advice—I feel that I am very incompetent in advising English-speaking people about their own language, but if I were to give you some advice, I should put it in this form: Think always of your language as a living, spoken language, and as being essentially the activity of English speakers, in the first place; and then, in the second place, make your teaching of grammar as little abstract, as concrete as possible. Thereby I think you will gain two things: you will interest your pupils more, and you will really make them understand the subject better than by abstract talk, which will always be more or less pedantic.

PHYSICS AND EDUCATION

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At the recent meeting of the American Association for the Advancement of Science a joint session of Sections B, Physics, and L, Education, was devoted to a discussion of the teaching of physics. This is the first time in the history of the association that such a discussion has formed part of the regular program. It indicates the change that is slowly but surely creeping over the university mind of the country in that the problems of teaching are coming to be regarded as research problems of at least no less importance and difficulty than those of pure science. Section L, to be sure, devotes all its sessions to the presentation and discussion of research work in education; but it is encouraging to have Section B also turn its attention in this direction.

Those who attended this joint session must have been impressed with the wide difference in the points of view from which the two sections surveyed the field. It is a familiar fact that specialists in any field are very wary about committing themselves definitely in reply to questions about their specialty. Ask a geologist what a specimen of rock is, and he will reply that it looks like limestone, and probably is that, but he would not care to be quoted as having said that it was limestone until he had made suitable tests and verified the statement carefully. The same geologist does not hesitate to give final decisions on matters of politics or even of education, although he has never studied either scientifically. He would even be ready to legislate about the requirements that high schools must meet, although he has never seen the inside of a high school since he himself graduated. In such matters he would legislate on the basis of vague impressions retained from his own school days and other vague impressions he has received from others. A very similar condition prevails with the two sections. Section B criticizes any new

suggestion in physical science very searchingly, submits it to rigorous, unbiased tests, and insists on satisfactory verification. Section L does the same in the field of education, but takes its physics largely on faith and with little attempt at criticism or verification. Section B treats suggestions in education as Section L does those in physics; but with this difference—L does not presume to dogmatize about physical science.

This fundamental difference in the attitudes of the two sections leads to a radical difference in their respective attitudes toward physics teaching. This difference was pointed out most lucidly by Professor Dewey in his vice-presidential address on "Science as Method and as Information." This difference is not sharply defined in that all members of B do not regard the imparting of information as the sole end of science instruction any more than all the members of L regard the acquirement of the scientific method of thinking as the sole aim of teaching. There is, however, a marked difference in the ways in which the two sections place the emphasis. For B, information is paramount and method of thinking subordinate; for L, the reverse is true.

From this prime difference between the two sections follow a number of subsidiary differences. These may be paired off in couples in some such way as the following:

B	L
1. Logical arrangement of concepts.	Intuitive development of concepts.
2. Analytical reasoning with abstract ideas.	Good judgment in concrete cases.
3. Forestalling possible future needs of physicists.	Meeting actual present needs of students.
4. Power to pass possible examinations.	Power to act intelligently in actual situations.
5. Learning laws intellectually.	Power to solve problems scientifically.
6. Verbal statements of principles.	Weighing of evidence.
7. Intellectual attainment.	Social efficiency.
8. Satisfaction of college requirements for few.	Service to community for all.
9. Mental discipline.	Enthusiasm and motive.
10. Logical rigor.	Useful approximation.

It is, of course, not possible that the characteristics of the members of a pair be intrinsically and mutually exclusive. Nor is it claimed that Section B stands wholly and solely for the first

set, and Section L wholly and solely for the second. It is again a matter of emphasis. Section B as a whole strongly emphasizes the elements in the first set; while L, in like manner, strongly emphasizes those in the second.

Up to the present time the first set of characteristics have been dominant in physics teaching. It is for this reason that this teaching has not been satisfactory. The present problem is, not to make the other set as overbearing as the first has been, but to get a just balance between them. It is not that logical arrangement should be banished and intuitive development substituted; but that intuitive development should precede and lead up eventually to logical order. It is not that social efficiency precludes intellectual attainment; but that social efficiency should precede in importance. The other will surely follow. The reverse is, however, not true—a man may have high intellectual attainments and be socially highly inefficient.

Again, it has been forcibly proved of late that when a high school tries seriously to meet college requirements, it fails egregiously in service to its community. On the contrary when it serves its community efficiently, it should meet college requirements far better than at present. In like manner, mental discipline may be possible without enthusiasm and motive, but at best it trains the intellect only while the will runs riot with morality. But when enthusiasm and right motive precede, not only is the mind disciplined, but the will also, leading to firm character as well as intellectual strength.

But perhaps the difference between the two points of view is most forcefully shown in the respective attitudes of the two sections with regard to the use of physics for entrance to college. Section B has as a whole always regarded high-school physics as being taught mainly for purposes of college entrance. In this subject, more than in any other, the high schools have been "required" to try to teach what the colleges specified was "the thing." These specifications have always been framed by college men with a view to forestalling the needs of physicists and to securing a treatment of topics that should be the most logical and rigorous known in the then state of the sciences. College men

have criticized elementary texts as if they were scientific treatises instead of tools for education and have denounced educationally insignificant departures from current scientific creed as illogical or unscientific. High-school men have never been encouraged to try experiments in teaching, in an endeavor to find out by experiment—the only possible way—what is best for high-school pupils. And why should they try experiments when those who were masters of *physics* had said that the *teaching* must conform to these definitions?

Section L, on the other hand, cannot accept the postulate that the straight and narrow path laid out by the colleges is the best way to teach elementary physics without scrutinizing closely the results of the work; any more than Section B will swallow Blondlot *N-rays* without inspecting them carefully. Nor do we have to look far for conclusive evidence. Most of us find it in the examination books turned in by our students at every examination. As physics teachers we are amused at the "new knowledge" and utter nonsense contained in these books. We are so used to it that we have ceased to regard it as indicative of a serious condition. We laugh it off with the remark: "Every exam brings out samples like that." "And after all," argue the physicists, "what harm is done? The great majority of the pupils will not have to know how to calculate the velocity of a body sliding down a plane, nor will they be seriously handicapped in life if they do not know what the index of refraction is. If they do not know a thing, they should be taught to say they do not know instead of making up such nonsensical answers." In like manner we comfort ourselves for failures to make clear other portions of the subject, all leading to the very obvious question: Why attempt at all to teach such things under the name of physics that when a boy is questioned about them the only sensible answer he can give is "I don't know"? Perhaps some other member of Section B will answer this.

Another important test of results is given annually by the College Entrance Examination Board. The result is that out of fourteen questions set, about 70 per cent. of the candidates fail to answer four correctly. Perhaps some of the colleges that

examine entering students in physics can furnish more encouraging figures on this matter. So Section L is prone to conclude that the method prescribed by the colleges is failing to meet the expectations of the colleges as manifested in their examinations. Either the method or the examinations or both must be a misfit.

Even Section B is now half persuaded that this is so. But the blame is laid on the poor teacher who has been working his best to do faithfully what he was told to do and not on the college-born-and-bred specifications of the course nor on the examinations. As a cure it is urged that we need better prepared teachers, better laboratory facilities, better apparatus, and an attendant who is mechanically inclined, so that the teacher may have more leisure. We are told that physics teachers should have taken an M.A. in *physics*, should know some calculus and some chemistry: but not a word is said about knowing boys, understanding schools, and having some idea of what a problem in education looks like and of how to go about to solve it—in a word, about having better *teachers*.

Section L agrees to the desirability of all the good things suggested by its colleagues in B. But it is very certain that the trouble does not lie so much with the teacher and his apparatus as it does with the sort of a thing he is told to do, and the way in which the specifications were made and are administered. This conclusion is based on the fact that the course has been designed after a study of logical order, scientific rigor, and the possible needs of physicists, and not after a scientific study of high-school pupils and their needs and mental possibilities. No such study of pupils has, so far as I know, been made in America, excepting by President G. Stanley Hall; and, although everybody knows what his conclusions are, they have not yet received the attention that is due them. In a few cases President Hall's suggestions have been put into practice with great success, but the colleges have refused to give entrance credit for this most creditable work, thereby discouraging all but the bravest teachers from trying it.

Under the conditions that exist in the country today, the suggestion that better apparatus and teachers who know more

physics are needed does not begin to solve the problem. The statistics of the Bureau of Education show that there are in the country in towns having more than 8,000 inhabitants but 800 high schools. These schools average 17 teachers each, and have 365,000 pupils. In the smaller towns there are 8,160 high schools having an average of 2.7 teachers each and 405,000 pupils in all. Therefore 53 per cent. of the pupils attend small high schools which have less than 6 teachers each. In such schools the man who teaches physics must also teach two or three other subjects. Therefore he must be a *teacher* rather than a *physicist*. Not more than one in ten of those who teach physics can be expected to have an extended knowledge of the subject.

In 1908 there were 29,000 high-school graduates who were prepared for college. The number of those who study physics each year in the high schools is about 130,000. Not all who were prepared for college had studied physics. It is safe to say that not more than one in every five of those who studied physics used it for college entrance. Therefore the problem is not how we shall produce conditions in which the present quasi-rigorous *physics* shall be taught everywhere by specialists, in preparation for a profession that almost none follow; but rather how, under existing conditions, we shall get for all who study it the best possible *teaching* of physics in the brief time allotted to this subject. This is not an easy problem, since it involves the reorganization of a large body of subject-matter on a new basis—instead of being a *logical* system, it must be a *teachable* system. The emphasis must be shifted, so that it falls less heavily on the traits assigned above to Section B and more heavily on those ascribed to Section L.

The solution of this problem will take a long time and require much experimenting and much scientific study. It involves a careful study of how we obtain clear notions of physical principles—what part do our motor reactions and what part does our reason play in this process? We certainly do not come to understand a subject like acceleration by learning definitions and formulae and solving ever so many unreal numerical problems. In Germany much attention has been given recently to

the experimental solution of this problem by Frey, Seyfert, Verworn, Remus,¹ and others, to say nothing of their celebrated *Unterrichtscommission*. But in America nothing has as yet been done in this direction. America showed Germany the necessity of having laboratories for high schools; must we learn from her how to use them for the best educational results? Are we not competent to study this problem on our own account, and to solve it for ourselves in a way that will suit our own peculiar conditions?

Therefore the partnership that has been started between B and L is an auspicious event, because both are parts of a scientific organization where all problems are solved in a scientific way. Certain it is that as suggestions for change are tried out in practice, as hypotheses are tested and submitted to scientific scrutiny and criticism, and as educational theories are verified by experiment, the points of view of the two sections will gradually approach each other. Who knows but that they may some day coincide?

¹O. Frey, *Arbeitsunterricht* (Leipzig: Wunderlich, 1907); R. Seyfert, *Die Arbeitskunde* (Leipzig, 1902); M. Verworn, *Beiträge zur Frage des naturwissenschaftlichen Unterrichts an den höheren Schulen* (Leipzig: Teubner, 1906); K. Remus, *Der dynamologische Lehrgang* (Leipzig: Teubner, 1906).

THE RELATIONS BETWEEN COLLEGES AND SECONDARY SCHOOLS: TENDENCIES AND POSSIBILITIES ¹

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President Wilson has said that "one of the greatest interests that attaches to our generation is, that almost everything regarding education has to be said over again." I like to quote this saying at the outset, as a defense before the event against the charge you may presently bring against me, that I have merely said various things over again. But, in fact, the whole educational field has been so plowed over and harrowed over in recent years, that it has become as difficult to find an untouched corner or to start a new furrow, as it is for graduate students to find subjects for their theses. Where so many individuals and associations and conferences and boards are talking, it is impossible that they should all say different things; not only impossible, but undesirable. We cannot afford to follow the lead of the would-be Doctors of Philosophy in trying to explore and map some region beyond the present frontier, while the heart of the country remains unsubdued; we should not give too much of our time and strength to matters of detail while the fundamental problems remain unsolved.

I do not mean to imply that our present educational condition, marked as it is by so much discussion, disagreement, uncertainty, possibly confusion, is a cause for discouragement. On the contrary, I believe that the very opposite is the case; that he who surveys with care and with impartial judgment the events of recent decades in the world of education will observe sure signs of progress. And the first to which I would direct your attention is the growing spirit of friendliness and co-opera-

¹ An address delivered before the Hudson River Schoolmasters' Club, April 16, 1910.

tion between the secondary schools and the colleges. Time was, and not so very long ago, when the college was, in its own estimation, a kind of Olympus, as compared with the lower earth of the secondary school; when in his own eyes the college professor, or even the college instructor, was to the schoolmaster as Hyperion to a satyr. In other days there was doubtless some reason for this feeling; but, as in all things human, the feeling tended to persist long after the reason had ceased to be. Half a century, or even a quarter of a century, ago, the colleges of New England and the Middle States were practically the only institutions with established traditions, high and fixed standards, and scholarly faculties. With the exception of certain old endowed preparatory schools, whose modest function was to serve the whims of the colleges, the secondary school had not found itself or its mission. Each college went on its own serene way, modified or increased its requirements without consultation either with other colleges or with the preparatory schools, and expected the latter to adapt themselves humbly to the changed conditions.

Then came the period of the establishment of public secondary schools, in ever-increasing numbers, all over the country. Their very number won for them a certain consideration at the hands of the colleges. Furthermore, it soon became evident that they could be extremely useful to the college which was readiest to meet them halfway, in fact that the college was dependent upon them, that it must foster their growth if it would advance its own, and help to make their work efficient if it would improve the quality of its own students. It seems absurd to suggest that such self-evident facts as these were discovered but slowly by the colleges; yet unfortunately we all know a few colleges and many college professors who have hardly discovered them yet, at least if one may judge from appearances.

Another cause which has operated to open the eyes of the college to the claims of the secondary school and so to bring the two institutions nearer together is of vastly greater importance than the one just mentioned, and still has not received, I think, adequate consideration; I refer to the continual advance in

scholarship standards among secondary-school teachers. The secondary schools have always had competent and able *teachers* (all of us, I suppose, have felt the surprise and disappointment of finding less efficient teachers among our college instructors than we had known in the preparatory school). Now-a-days, however, very many of the teachers in our secondary schools are scholars as well, in attainment and in reputation. More and more of them are men who have obtained the doctorate, or at least have done a considerable amount of graduate work. If President Harper's prediction that the degree of Doctor of Philosophy would ultimately become an essential for the high-school teacher has not yet been entirely fulfilled, we are certainly able to note continuous progress in that direction. Hence there is no longer a great gulf fixed between the college and the secondary-school teacher in respect to scholarship, for, one may observe in passing, the doctorate is not yet universally regarded as a *sine qua non* for the college instructor. We might have learned long ago from the Germans that there is no necessary or natural distinction in scholarly attainments between men engaged in secondary teaching and those engaged in college, or even university, work. All of us know, and have known ever since we began our graduate studies, how considerable a portion of the best scientific work in Germany is done by teachers in the *Gymnasia* and the *Realschulen*. But we are slow to get rid of our preconceived notions. I recall two incidents of the early nineties at Yale which almost all of us counted nothing less than astonishing: first, a man who had taught in secondary schools only was called to an assistant professorship in the college; and further, another young man who had made a conspicuously fine record as an instructor in the college, who seemed well on the way to a professorship, resigned his position and undertook the establishment of a preparatory school, saying merely that he felt he could derive more pleasure and accomplish more important service in secondary teaching. Not only that, but he took with him to his new field no less than three more of our instructors. And we queried whether Yale was degenerating, in that it must go to a high school to find a professor, while

at the same time it could not hold its own instructors against the attraction of what seemed to us very lowly positions. Of course, I should complete the story by saying that the new professor has since gained an international reputation as a scholar, and that the schoolmaster has achieved a complete success in his new work; and so, as it chances, I can say with truth. More important, however, from our present point of view, is the fact that we ultimately came to see these incidents in their true light, as not merely strange, but significant, as marking the beginning of a new order of things. We were disabused of our unreasonable and unreasoning prejudice; we came to comprehend faintly that we were all, in school and college alike, engaged in the same great task, and that we were all the same manner of men. Such, I am sure, has been the experience of other colleges and other college teachers. The most conservative of professors, when he sees some of his newly made Doctors of Philosophy called to college positions and others, equally able, called to secondary schools, must gradually conceive a new idea of the dignity of secondary-school teaching and the scholarly rank of secondary-school teachers. He can meet these former pupils of his own on a footing of approximate equality; through them he is brought into closer touch with the schools, he comes to appreciate their problems and is ready to take counsel with them on matters of common interest, and, broadly, his attitude toward the schools becomes one of confidence rather than suspicion. This tendency has gone very far in our own day; not far enough, I am convinced, yet still very far. The school men have deserved, and have therefore won, in ever-increasing measure the respect and consideration of the college faculties. So, at the present time, our so-called learned societies, once composed of college men alone, include in their membership a considerable proportion of secondary teachers; very many of the textbooks you are using are the joint work of college and school men; and we have, in New England, in the Middle States, in the South, and in the West, associations of colleges and preparatory schools, whose members, or, possibly I should say, whose more enlightened members, meet as peers.

I need not remind you that one of the unwritten laws of our own association provides for the alternation in the presidency between college and secondary-school men, and further, that in the discussions of the association the school teachers may criticize the colleges sharply and not be held guilty of *Majestätsbeleidigung*.

This growth of a closer, more cordial relation, a relation based upon mutual dependence and mutual esteem, between the schools and the colleges, is so intimately connected with a second tendency that it is difficult or impossible to say how far each is the cause, or how far each is the effect, of the other. I mean, our increasing realization of this fundamental fact, to quote the words of a college president, "that the school and the college are doing the same thing exactly," that we must "make the boy feel that [in passing from the school to the college] he is not going from one thing to another, but that he is simply going on to prosecute a little further the fair journey upon which he has set out." It seems strange enough now that one should not have realized this long ago. It was so manifest that the line between school and college was purely arbitrary, a historical accident. Why, in all reason, a foreordained and inviolable line between Vergil on the one hand and Horace and Livy on the other, why geometry in the school and trigonometry in the college, why just three years of Greek for admission and not two or four? Perhaps no one of you was ever in bondage to these prescriptions; I am sure that I was, however, and that my companions in bondage were many. My recollection does not reach back very far, yet I can remember when one of our Latin professors hesitated to offer a college course, or perhaps it was a graduate course, in Caesar, lest he should be laughed at by his colleagues and the students alike. Caesar was for school boys alone; who could imagine otherwise? I fancy myself that he had more cause to fear his colleagues than the students; for our boys found out before we did that there was nothing fundamental about the change from school to college; witness the complaints we hear from Freshmen who are dis-

appointed at finding themselves merely going on with the same old grind.

But if the entire educational course should be, and is, a continuous one, why so much trouble at the point of passing from school to college? Here of course one approaches a burning question, which I have neither the ability nor the inclination to consider in detail. Let me say, then, at once that I believe the development of a more cordial, considerate, mutually trustful relation between secondary schools and colleges gives promise of a time when our boys will pass from the one to the other with just as little trouble and circumstance as now attend their passage from one class to another, in either school or college. More concretely, I mean the universal adoption of the so-called certificate system of admission to college. Here we are manifestly in the doubtful territory, at once the realm of tendency and of possibility. The universities and colleges of the Middle West, through the North Central Association of Colleges and Secondary Schools, are frankly and entirely committed to the certificate system. The New England College Entrance Certificate Board, by eliminating in great measure the abuses incident to the system, has given it a standing in this part of the country which it did not have in other days. And now the Association of the Middle States and Maryland has recently established a similar board, to work along about the same lines as the New England board. On the other hand, such prominent institutions as Columbia, Harvard, Princeton, and Yale admit by examination only and not by certificate. With them such a policy is not only traditional, but manifestly a matter of real conviction. And the influence which they exert is very great. Furthermore, the friends of these colleges are prone to think that here is a method of dividing the sheep from the goats, that admission by certificate marks the weak college, whereas the strong college insists always upon an entrance examination.

But we are presumably reasonable creatures, and therefore not inclined to accept such a complacent theory as this without proof. Let us pause to consider some of the arguments which have been urged in favor of the certificate system, notably by

President Rhees of the University of Rochester.² And first, the principal's certificate gives the college the benefit of the judgment of a man who is personally acquainted with the candidate, who knows his individual traits and capacities, and who further knows the record he has made through a considerable period in work of the same sort as that which he will do in college—of the same sort in that it calls for the same qualities of mind and character. Here is a very great advantage. For let us get to the bottom of the matter if we can. Suppose any one of us wanted to find out, for purposes of his own, the ability and attainments of a given boy in Latin or mathematics: would he prefer to give the boy some examination papers to pass, or to consult a colleague who had taught him Latin or mathematics for one or two or three years? I cannot believe that there is one of us who would not choose the second method. To be sure human judgment is fallible; but the question is not as between human judgment and a mechanical contrivance which cannot err, but between two forms, so to speak, of human judgment: the judgment of the man who is in a position to know in the individual case, and the judgment of the men who make examination papers for the mass and the men who read them by the mass. The certificate of his teacher will do justice instead of injustice to the boy who is likely to be rattled, as we say, by an examination, especially an examination which to him is supremely important and which he undergoes at the hands of strangers; it will do justice instead of injustice to the boy who occasionally has an "off" day; or, a more important matter, it will do justice instead of injustice to the able boy who has not completed thoroughly all the prescribed items of the preparatory course. For, in all reason, what the college wants to know, and the only thing it can care to know, is whether the boy is fitted and competent to do the work that it gives its students to do. After long subservience to detailed statements of entrance requirements we are coming to see this fundamental fact. I cannot do better than to quote here from the last report

² *Proceedings of the Association of Colleges and Preparatory Schools of the Middle States and Maryland* (1907), 28-39.

of President Pritchett of the Carnegie Foundation. He states that the colleges are now tending toward a "policy marked by these two important features: (1) freedom for the secondary school in choice of studies and in methods of teaching, so that it may make its work inspiring and fruitful to those who resort to it, the majority of whom will not enter college; (2) insistence by the college merely upon the attainment by the student in the secondary school of an adequate intellectual training within large limits, irrespective of the details through which it may have been procured." These, I believe, are words of truth. The adequate intellectual training is the one thing needful. And I think we can best learn whether the boy has this one thing needful from the principal who knows him.

To turn to a second, a negative, argument: it is becoming more and more clear that entrance examinations are but a poor test of a boy's fitness to enter college. Any one of us can recall instances in his own experience where friends perhaps, or perhaps pupils, have been admitted by examination when they should not have been admitted, or debarred when they should not have been debarred. There are too many accidents, as I have suggested above, which may affect the trustworthiness of the results. But further, we now have before us for the first time, in President Pritchett's recent report, statistics of the actual practice of those colleges which admit by examination only. These statistics are sufficiently startling. They show, for example, that of the whole number of candidates admitted last fall to the undergraduate departments of Harvard, Yale, Princeton, and Columbia, no less than 55 per cent were admitted with conditions, or, in other words, did not pass the entrance examinations. And this percentage of conditioned students is slightly better, i.e., lower, than that recorded for the same institutions in the fall of 1908. That is, these colleges admit by their practice that their examination test is inadequate and inconclusive. No doubt it is proper that they should make exceptions; none of us but would be willing to give the slightly conditioned candidate a chance; but when the exceptions become the rule, it seems clear that there is something amiss. I doubt,

therefore, whether President Pritchett's conclusion can be challenged; he says: "If so considerable a body of students classed as deficient by the examinations deserve admission, it is clear that some other means of regulating admission ought to be devised . . . ; and if they do not deserve admission, then the present policy is a blow at the efficiency of the good secondary schools"—in which case, I may add, the examination system proves itself injurious, not merely to an individual or a particular institution, but to the general cause of education.

Again, consider this immense advantage of the certificate system, that it "leaves the secondary school free to devote itself to education rather than to cramming for examination," studying over old examination papers of the various colleges, and reviewing again and again the things which they touch upon most often. A prominent high-school principal in New York City was saying to me only two weeks ago: "It seems to me sometimes that we don't do much teaching now-a-days." And then he listed for me the examinations which his students are called upon to take: the state examinations, the training-school examinations, the examinations of the College Entrance Board, and so on. Such a condition of things is nothing short of lamentable; for the secondary school should be teaching first, last, and all the time; and furthermore—a point in passing which is by no means unimportant—it should not be hampered in its work by having to employ different methods, perhaps form different recitation groups, for those students who do intend to enter college and those who do not.

Lastly, let me recall what I was saying a little while ago, that we are all, in school and college, engaged in the same task; that a boy's educational course is one course, and not two courses; and if there is anything which will ease the transition from school to college, which will make the boy feel that he has not come to a sharp turn, but only to a point where the road widens a little, it is worth adopting. I believe that the certificate system of admission can help to perform for us this great service.

I have not mentioned the disadvantages of such a system or

the abuses to which it is liable, but I have no doubt that you have been recalling them to yourselves. They are certainly obvious and serious enough. The certificate privilege is a dangerous thing in the hands of a principal who may yield to outside pressure, or to the desire to be known as sending large numbers of his students to college, and therefore give a certificate to a boy who is unfit. It is this above all which has brought the certificate system into deserved disrepute in many quarters. I believe, however, that if the possibility of such abuses can be eliminated, this system is far better in almost every way than the plan of admission by examination; and secondly, that abuses can in fact be eliminated—still more, that they have been eliminated in our own day. I refer particularly to the policy adopted in the Middle West, which may be briefly described as an examination of the schools rather than of individual students. The North Central Association of Colleges and Secondary Schools has prepared a list of accredited schools, imposing certain specific tests with regard to equipment, number and quality of teachers, etc., and then, the list once prepared, subjects these schools and others which may desire to be accredited to “rigid, thoroughgoing, sympathetic inspection” through officers appointed for that purpose. The schools, one may say, are conditioned before the event and not their students after the event. It is substituting a wholesome for an unwholesome condition, using the word, if you please, in both senses. The inspector can, and does, say to the school principal, “You must improve your instruction or your instructors in this or that department or you cannot remain on the accredited list;” or “you must reduce the amount of work exacted from this or that instructor;” or “you must improve your library facilities.” It is easy to understand the beneficial effects of such a policy upon the secondary schools and so upon the whole educational system. The tonic, stimulating influence upon the school of examinations conducted by some external authority—an influence which we all appreciate and for the sake of which many of us may have wished to hold to the system of entrance examinations, despite its defects—this influence, I say,

is not lost, but intensified. The college authority uses the ounce of prevention, instead of using, or rather not using, the pound of cure. It sees to it that its candidates shall be well prepared, instead of rejecting them, or accepting them, when they are ill prepared. One other happy result is that the secondary school may not only, as I have said, "devote itself to education," but may, within limits, plan its work as it will and allow some freedom to individual teachers. A teacher of Greek, for example, may venture to read the sixth book of the *Iliad*, perhaps, instead of the third, and thus get away from the everlasting repetition, to the great good of himself and his class.

To the colleges the results of the system are eminently satisfactory. Their students are in fact well prepared. None come to them by certificate except from accredited schools, and the principals of accredited schools do not give certificates to unfit candidates.

Here, I believe, is the very nearest approach that has yet been found to the successful solution of a troublesome problem. Is it possible here in the East? The New England College Entrance Certificate Board and the Middle States Association have not adopted the western plan; not, however, because they did not count it the best plan, but because the expense incident to an adequate system of inspection seemed to them prohibitive. I am one of many who hope that a way will soon be found of overcoming this obstacle. And may I venture to express the further hope that the State Education Department of New York, which has done so much for the common cause both in this state and in others, may lead the way in this matter, and so strengthen the hearts and unlock the treasuries of the eastern colleges? We need a leader who will command respect and who is not bound by such financial limitations as hamper the impecunious colleges; and the State Education Department, I am sure in the one case and I hope in the other, possesses these qualifications. If a rigid examination by the department of the secondary schools of New York rather than their scholars should accomplish the results we have reason to expect, the example would speedily be followed by our colleges; and then

"relations between colleges and secondary schools" would cease to be a subject for discussion.

Finally, permit me to dwell for a moment upon one further possibility. I am optimist enough to look forward to the day when the secondary school shall have gained such efficiency and strength, mainly through loyal service and effort from within, partly through the sympathetic, helpful counsel and inspection of its college friends, that it shall stand alone, shall rule in its own domain independent, because no longer needing either supervision or examination. It will swim without the cork of college inspection, and college faculties will accept its verdict precisely as they accept that of their own instructors. Why should it not be so? Recall for a moment a noteworthy feature in the policy of those institutions which, we say, admit by examination only. Harvard, for example, examines all candidates for admission to undergraduate courses; but it admits to its medical school anyone who holds a college diploma. Columbia examines all candidates for admission to undergraduate courses; but it admits to the College of Physicians and Surgeons anyone who has completed two years of college study. In other words, these institutions accept the certificate of a college but not that of a secondary school. Such discrimination against the secondary school may be reasonable at the present time; but can anyone who realizes what the secondary school has achieved, against manifold obstacles, during the past generation, doubt that such discrimination will some day be a thing of the past? I await, therefore, although I may not live to see it, the establishment of an honor system between the schools and the colleges. It should not be harder for us to rise to such a system in our relations with one another than for our students to attain it in their relations with us.

A HIGH-SCHOOL COURSE IN APPLIED CHEMISTRY

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The recent recognition that the high schools are not to be regarded primarily as preparatory institutions for the universities and colleges of the state has resulted in a general awakening among principals and superintendents with reference to high-school courses of study in Wisconsin. There is current a strong feeling that a larger part of the high-school curricula should be a direct preparation for the future life-work of the pupils. This feeling manifested itself recently at a meeting of The Superintendents' and Supervising Principals' Association, when resolutions were passed asking the higher educational institutions of the state to be more liberal in their entrance requirements, especially with reference to commercial and industrial work. A further phase of this same movement is the desire to make subjects that are already in the curricula yield a larger measure of practical value. This feeling is particularly strong with reference to the sciences, and especially in the case of physics. In this branch it has been greatly augmented by the campaign which Mr. H. L. Terry, inspector of high schools, is conducting against the present teaching of physics in secondary schools.¹

The writer purposes in this series of articles to describe the work of the Menomonie High School in the effort to make its science work more practical. The articles will describe the courses in chemistry, physics, and botany, as they are conducted at the present time. These courses are not to be regarded as final, nor are they suggested as a scheme to be adopted bodily by another school.

Chemistry in the Menomonie High School is an optional subject in all courses except the industrial course, where it is required. It may be elected during either the junior or the

¹ Cf. H. L. Terry, "Four Instruments of Confusion in Teaching Physics," *School Review* (April, 1910), VIII, 241-45.

senior year, and in certain cases sophomores are allowed to take it. The first semester is devoted to a thorough study of the basic principles and phenomena. In order to cover this work in an adequate manner it has been necessary to reduce the subject-matter to the fundamentals, leaving out much that is in the average textbook. This has resulted in one decided improvement—the elimination of much of the non-essential, theoretical work, likely to be so dear to the heart of the specialist and worth so little to the high-school student. During the second semester two lines of study are carried on. The girls study household chemistry and the boys have industrial chemistry. To facilitate progress boys and girls are put into separate sections. In fact, they are segregated from the beginning, but this is more a matter of convenience than of necessity as far as the work of the first semester is concerned.

The character of the work may perhaps best be made evident by a synopsis of the course and a few of the experiments.

The work in household chemistry may be grouped under three heads: the chemistry of foods, of bread-making, and of cleaning. The different classes of foods and their general reactions are studied. Whenever it is possible the different food-principles are extracted from the foods in which they commonly occur. For example, in the study of proteids, collagen is extracted from bone and converted into gelatin. Tests are made on the solubility of syntonin in lean meat. Studies are made on albumin from eggs, casein from milk, and a proteid from some vegetable. In the study of sugars, glucose is prepared by the hydralization of starch which the student has previously extracted from potatoes. An effort is made to familiarize the student with the common food-stuffs and with the changes they undergo in cooking.

The work in bread-making includes the fermentation process, a study of the necessary and favorable conditions for the growth of the yeast, with regard to food-supply, moisture, and temperature. In connection with the study of bread raised by the non-fermentative process, baking-powder and soda are subjects of consideration. Tests are made for ammonium,

cream of tartar, phosphate, and sulphate powders. A cream-of-tartar powder is prepared, the best proportionate amounts of soda and tartrate being determined by experiment. The reactions of various acids, such as hydrochloric, lactic, and tartaric, with soda, are noted; also the reactions of acid salts.

The chemistry of cleaning involves a study of the chemical nature of stains, such as grease, blood, paint, rust, ink, fruit, tea, coffee, and grass stains, with the different cleaning reagents and their proper application. A kitchen cabinet of cleaning reagents is prepared and labeled as to composition and use.

The following experiment is chosen from the work on soap-making:

Dissolve 15 g. of potassium hydroxide in 120 c.c. of water and pour half of this into a porcelain evaporating dish of at least 500 c.c. capacity; add 60 c.c. of water and 50 g. of tallow. Boil this solution for three-quarters of an hour, carefully replacing from time to time the water which has been lost by evaporation; then add the remainder of the solution of potassium hydroxide and boil at least an hour more. Water should be added as before, but the volume of the liquid may be allowed to decrease about one-third. Cool. What are the properties of soft soap? Use? Add 20 g. of salt, boil for a few minutes, and allow the liquid to cool. The soap will rise to the top, and the glycerine, excess of lye, and salt will remain in solution. Write chemical equation representing reaction for formation of soap.

The industrial chemistry for the boys covers a study of clays and brick-making, cements, mortars and glazes, the sources and preparation of illuminating gases, fuels, the softening of water and tests of its purity, bleaching and oxidizing agents, the extraction and clarification of beet-sugar, making of matches, the denaturing and quick vinegar processes, alloys and amalgams, covering the preparation of brass and solder, preparation of common compounds, manufacture of pigments and inks, blow-pipe analysis of some native minerals, electrolysis and electroplating, preparation of varnishes and stains, a little work in photography, and some agricultural chemistry. In this course certain basic work is required of all. Beyond this there is some individual adaptation of experiments, so that each pupil does not personally conduct work in all of the subjects indicated.

The following experiment is chosen from the study of fuels:

To determine the fixed carbon in coal.—Heat about 2 gm. of pulverized coal in a porcelain crucible closely covered, as long as any smoke is given off. Weigh. To what is the loss of weight due? What remains in the crucible? Heat the remainder, with cover removed, in a blast flame until all the carbon is burned out. Weigh. The second loss in weight represents the fixed carbon in the coal. The incombustible remainder is ashes. Compare your results with the following table:

	Water	Volatile Matters	Fixed Carbon	Ash
Lignite	18.00	20.00	50.90	10.20
Bituminous ..	1.97	38.60	54.15	4.10
Cannel	undet.	37.20	61.60	1.20
Anthracite ...	3.09	4.28	83.81	8.18

Compare the retail prices of the above coals and their fixed carbon content. Would this hold true if we lived in a coal-mining district? Why? Coke has a high carbon content. Its price is relatively low. Why?

Since the course as described has been conducted, with more or less modification, for six years, the writer feels that the results obtained are worthy of more consideration than if they were mere speculations. As previously stated, the work is elective in all courses except one. Notwithstanding this fact, from eighty-five to ninety per cent of the students completing the high-school work have elected chemistry. This may be regarded as a fair test of its appreciation by the students. Teachers feel that it gives the pupils a better training than would be obtained from a course in pure chemistry. This, I believe, is largely due to the fact that the students learn to think more clearly with reference to things chemical than do students who spend the whole year on theoretical chemistry. That the subject thus treated has greater value for the student who does not go beyond high school cannot be denied. The pupils taking this course we find are able to do good work in college or university chemistry. Since the course has been in operation graduates of the high school have entered at least three of the large universities of the Middle West and have pursued chemistry farther. Almost without exception these students have ranked well in chemistry—decidedly above the average. In one case a student entering a

university was admitted to second-year work in college chemistry and acquitted herself with credit.

Mr. W. M. Smallwood, in his discussion of "Some Problems in Secondary Science Teaching," in the April number of *School Science and Mathematics*, states that the teachers who "are in the process of cutting loose from 'the technical exactness of university methods' are blown hither and yon by 'humanized survey,' 'commercial,' 'hygiene,' or utilitarian motives. It is possible that they will have a pleasant sail while the water is smooth and they do not try to make a landing." Our experience has satisfied us that the teaching of chemistry with a utilitarian purpose in view need not result in lack of direction. Quite the contrary has been the case. We have found that pupils are not only able to reach port and effect a landing, but know where they are after landing, which is not true in the majority of cases where the subject is taught for the sake of pure science.²

²The writer wishes to acknowledge his indebtedness to the instructors who have worked out this course. The course was started by Mr. A. H. Christman, formerly instructor in chemistry in Stout Institute and in the Menomonie High School. The household chemistry was developed and organized by Miss Zella Perkins, now instructor in chemistry in Stout Institute. The industrial chemistry is largely the work of Mr. W. F. Roecker of the Menomonie High School.

DISCUSSION

PROFESSOR HALE'S ARTICLES ON LATIN COMPOSITION

Editors of the School Review:

I wish to thank Professor Hale through you for the articles that appeared in the April and May issues of the *School Review* in regard to Latin composition in the high school. I consider them the most pertinent things that I have read on this subject. They will repay careful reading on the part of anyone directly or indirectly interested.

My observation has led me to the following conclusions in regard to the present status of the subject as taught in high schools: that the teachers who are getting results are doing so at a great waste of time and energy; that the best teachers are far from satisfied with the present conditions; that few have any definite scheme for extracting themselves or the subject from the present unsatisfactory state of affairs.

Before we can attain the desired results it is necessary for us to see clearly the weak points of the present system. This is just what Professor Hale has done. He has made a successful start toward bringing order out of chaos. He has brought to the work his high scholarship and unusual facilities for investigation and experiment. The result is without question satisfactory.

Judging from what he has written in these articles I should say that at last we have a college professor who is not only in sympathy with the problems of the secondary-school teacher, but one who is doing much to help us solve these problems. I am looking forward with interest to the third article of the series which it is intimated may be forthcoming soon.

E. N. BABCOCK

NORTH ATTLEBORO, MASSACHUSETTS

BOOK REVIEWS

The Junior Republic: Its History and Ideals. By WILLIAM R. GEORGE.
With an introduction by THOMAS M. OSBORNE. New York: D.
Appleton & Co., 1910. Pp. xv+326. \$1.50 net.

This is a real book about a real work by a real man. In it the founder of the George Junior Republic, in Freeville, New York, carries the reader with him from the streets of New York City, where the problem of delinquent boys first seized upon him, through the years of struggle toward a solution of the problem for such of these boys as he could gather about him in the Republic. The book closes with a brief reference to other republics already founded or to be founded by Mr. George in all parts of the United States.

The history and ideals of this unique educational experiment are dramatically and honestly told by the man whose personality has made the experiment possible. No serious student of the problems of juvenile delinquency, on the one hand, or of the essentials of education in character for normal children, on the other, can afford to be ignorant of this book. A visit to the Republic itself is also richly worth the while.

This review will confine itself to one criticism and to an appeal for a wide application of what seem to the reviewer to be the essential factors in the success of the George Junior Republic.

Before doing these two things, however, the reviewer wishes to call attention to a fact now widely recognized, namely, that the experiments in education and discipline that for the past ten years and more have been carried on in connection with the training of dependent and delinquent children are among the most suggestive in the whole range of educational experience. The curricula and the methods which have been found effective enough to redeem these most difficult boys and girls in many instances are surely profoundly significant to the teacher of so-called normal children. Is it not time that the gibe that "boys and girls to get a really good education must first be declared dependent, truant, or delinquent by a court" should be robbed of the considerable degree of truth that has given it currency?

To return now to our criticism. Mr. George tells us in a fascinating way how one phase of the Republic life after another passed over into the control of the boys and girls themselves. The reader of this book, as well as the visitor to the Republic itself, is repeatedly reminded that the men and women at the head of the Republic do not do much toward "running things." But one is at a loss to reconcile this statement with a certain preparedness of even Mr. George himself—as suggested by his carrying with him about the Republic a pair of field glasses with which from time to time persons at a distance were scanned; likewise with a description in the book under discussion of how he hurried to and from the courtroom two or three times to get a "vantage post" where he could observe the efforts of "Officer Kelley"

to serve a summons on "Susie," his sweetheart, as described in chap. viii on "Girls as Citizens."

The writer of this review is not unduly critical. He believes that he is merely typical of many earnest students of educational problems who find themselves a little puzzled by an attempt fully to reconcile theory and practice at the Republic. To such students a detailed and perfectly frank discussion of the principles of the division of the labor of administration between the citizens and the adult officers of the Republic would be most helpful. In other words, this account of the Republic fails to make quite clear what the rôle of the dominant personality of a successful republic must be. To make this problem perfectly clear, as I believe Mr. George could, would be a great contribution to pedagogy.

Meanwhile, there is no need that teachers wait for the opportunity to found a republic exactly like that of Mr. George before they begin to put into habitual practice its most significant teachings. To the reviewer these seem to be such as can be used by all those who have to do with the training of young people, whether in the home, in the day school, or in the institution.

These teachings are: First, that every young person needs an inspiring, loving, trusted, personal, grown-up friend; second, that home, school, and reformatory become many fold more effective toward right conduct and good character if there is some organization that compels the newcomer to feel the social approval and disapproval of his peers; third, that adequate motives toward activity and social efficiency are essential to the best efforts of the young.

In the Junior Republic the economic motive is prominent. The home and the day school also must either avail themselves of this motive or find adequate substitutes for it.

In short, the lesson of the George Junior Republic is that, in addition to a good teacher, a good school needs adequate social motives of a personal sort, and adequate motives in the field of the child's physical, possibly economic and vocational, activities.

HENRY W. THURSTON

CHICAGO, ILLINOIS

Exposition and Illustration in Teaching. By JOHN ADAMS. New York: Macmillan, 1910. Pp. 428. \$1.25 net.

In commenting on Professor Adams' earlier work, *The Herbartian Psychology Applied to Education* (1898), a prominent educator said it appealed to him as an "oasis in a desert of method books." The later book has the same attractive qualities. The author has chosen a relatively limited field, "Exposition and Illustration," and has treated it adequately and thoroughly. In its limited scope it is like McMurray's *Method of the Recitation* and unlike Bagley's *Educative Process*. In the thoroughness of its treatment it is like some chapters in James's *Principles of Psychology*, which it resembles in certain other respects. Students sometimes read James just for the numerous anecdotes and incidents which are included. Similarly, Professor Adams' book bristles with concrete examples, many of which are sufficiently humorous

to serve as good stories for after-dinner speeches. In my first reading of the book, I had determined to glance it through rapidly to note its fundamental theory, but I found myself reading completely the illustrations, of which there must be more than a hundred.

It is not perfectly clear for what kind of teaching situation Professor Adams writes. Teaching is discussed as systematic, scientific, and artistic exposition, and rhetorical theory and the psychology of listening are treated, as by Quintilian in his discussion of the training of an orator. Examples are chosen sometimes from teaching, but very often from lecturing, preaching, essay writing, etc. Such expository teaching, which is the standard method with German secondary teachers, is rare in America below the college. Illustration, which means "explaining or exemplifying as by means of figures, comparisons, and examples," is treated in the second half of the book. This kind of teaching is more common in American schools, where such teaching as is not testing consists of supplementing or explaining the textbook. The topics discussed under illustration are exemplification and analogy, the story as illustration, elaboration, degree in illustration, material illustrations, the picture as illustration, the diagram as illustration, and dangers of illustration.

The discussion of exposition is based largely on the psychology of association and apperception—in the sense of the influence upon present response of the individual's past experience and present mental content. Much of this treatment is similar in content and style to James's "Stream of Thought" chapter, the terminology of which is largely used: e.g., "transitive" and "substantive" elements, "focal" and "marginal," "a continuum in constant change," etc. The chapter headings are "Mental Contents," "Mental Activity," and "Mental Backgrounds."

Chap. vi contains a critical discussion of the Herbartian formal steps; chap. vii, a similar treatment of the aim of a lesson as conceived by the teacher and as stated to the pupils. Chap. viii discusses the logical versus the psychological order of presentation, and the principles of proceeding from the simple to the complex, from the concrete to the abstract, etc., as summarized by Spencer.

In its structure and organization the book differs radically from some of the other books in the Macmillan pedagogical series, which have elaborate analytical tables of contents, paragraph headings, etc. Evidently Professor Adams has consciously aimed at the opposite extreme, and hence the book possesses none of the mechanical aids to study which James has decried in his criticism of those textbooks in which the material is "comminuted for the pupil into small print and large print, and paragraph headings, and cross-references and examination questions, and every other up-to-date device for frustrating the natural movement of the mind when reading, and preventing that irresponsible rumination of the material in one's own way which is the soul of culture." The student will find none of these aids present, but will have to "dig out" the main points, which are often buried unnumbered in obscure sentences in the middle of paragraphs. Moreover, the interesting illustrations, while they hold the student's interest, are likely to result in his missing the larger point.

The limited scope of the book would seem to preclude its use as the main

or dominant text in a general method course, but as one of several texts or as a reference work it should prove very valuable. For general use by teachers it offers the rare combination of interesting reading and profitable study.

SCHOOL OF EDUCATION
THE UNIVERSITY OF CHICAGO

S. CHESTER PARKER

The Arts Course at Medieval Universities, with Special Reference to Grammar and Rhetoric. By LOUIS JOHN PAETOW. Urbana: The University of Illinois, 1910. Pp. 134. \$1.00.

This work, originally intended as a doctoral dissertation, presents the results of thorough and accurate research. The mediaeval universities have of late been receiving in this country much of the careful attention they deserve, and the present thesis, with the investigations of Haskins, the treatise of Abelson, and the source-text of Norton, will fill in some of the gaps left by even such monumental works as those of Rashdall and Denifle. "The main theme has been to show just how and why the study of language and literature was neglected especially during the century before Petrarch"; but in working out this problem the author has thrown a flood of light upon a number of obscure places in university organization, curriculum, and texts.

From evidence supported in each case by a variety of documents, Dr. Paetow shows how absurd was the conclusion that the Latin classics were omitted by the mediaeval universities because of "the utter barrenness of classical as well as of other lay learning in the Middle Ages." In checking on this error, he treats at length the other interests—logic, philosophy, theology, law, and medicine—that served to distract attention from language and literature. Grammar, however, he finds did not die without a struggle, as witness the efforts of Alexander of Villedieu and Eberhard of Bethune, and later of John Garland and Roger Bacon. The exceptional interest in the subject, although without improvement in content and method, that was manifest at Toulouse and Perpignan, indicates what might have been general, had conditions been favorable.

The most noteworthy contributions of the author would seem to be his demonstration that there were at times separate faculties and degrees in "grammar" and the "notarial art," distinct from those in "arts," and his extensive and illuminating discussion of the *ars dictaminis*. The bibliographies of sources, both in manuscript and in print, and of secondary works, with the brief evaluation of each, show the pains that Dr. Paetow has taken in his research, and must prove of great value to the historical or educational specialist. The work, too, is well written.

FRANK P. GRAVES

OHIO STATE UNIVERSITY

High School Administration. By HORACE A. HOLLISTER. Boston: D. C. Heath & Co., 1909. Pp. xi+379. \$1.50.

A young man or woman desirous of devoting his life to teaching in secondary schools and ambitious of becoming a principal or more than merely a subject teacher must depend upon books for much of his preliminary

training. *High School Administration*, by Horace A. Hollister, undertakes to cover the whole ground briefly but clearly, treating every subject in a practical way and suggesting what books to read for a more intensive study of each phase.

Beginning with a brief epitome of the history of secondary education, the author considers the position of the secondary school in our system of education, both legally and technically, comparing and contrasting it with foreign schools. He then treats each phase of high-school administration—grounds, buildings, equipment, textbooks and supplies, the management of the school, and the extension and projection of the school life into the life of the community. Especially noteworthy are the passages on an ideal scheme of legal enactments (p. 46), on a modified method of furnishing free textbooks and supplies (p. 81), on the employment of "cadet" teachers (p. 96), on the training of teachers (p. 100), on teachers' investments (p. 108), on the purpose of instruction (p. 173), on correlation (pp. 208-9), on the definition of method (p. 218), on common fallacies (p. 223), on an ideal scheme of promotions (p. 231), on community life (p. 266), and on moral and religious training (p. 281). The appendixes seem well chosen to illustrate the corresponding portions of the text.

CHARLES MARSH CLAY

THE ROXBURY HIGH SCHOOL
BOSTON, MASSACHUSETTS

Das deutsche Bildungswesen in seiner geschichtlichen Entwicklung. Von FRIEDRICH PAULSEN. Second edition. Leipzig: Teubner, 1909. Pp. 192. M.1.25.¹

We have no series of books in America comparable to that of Teubner's "Aus Natur und Geisteswelt." Like the Reclam editions, these publications afford to the Germans inexpensive material of high grade which is an important element in bringing about and sustaining the high general intelligence of school men of that country.

This account of the historical development of the German school system is a model which could be followed elsewhere to advantage. In many of our works on the history of education there is a minimum of relationship between the new subject and the older more general historical studies. To Professor Paulsen the educational movement is an aspect of the larger culture development.

The work is divided into four books each containing three chapters. The first deals with the Middle Ages; the second with the periods of the Renaissance and the Reformation; the third with the time of French influence, from 1650 to 1800; and the fourth (about half the book) with the nineteenth century. The keynote is given in the statement that the ancient classical period developed the individual for the state, the Middle Ages developed him for the church, and the modern period for himself. This large recognition of the individual on the basis of effective social organization appears throughout the book. One of the most significant sections from this standpoint is that treating of the new

¹ *German Education Past and Present.* Translated by T. LORENZ. London: Unwin, 1908. Pp. xx+310.

humanistic movement in Germany in the eighteenth century. In the last period the various types of schools from the university down are considered. Students of secondary education will be especially interested in the sections on "Das neue Gymnasium," and "Die höhere Mädchenschule." In the former the larger meaning of the changes in German secondary schools is clearly brought out. In the latter the higher schools for girls are shown to be characteristic of the modern democratic tendency, and their relations to the woman movement and to the present development of higher education for women are indicated.

Rousseau, Pestalozzi, and Herbart are treated as a part of the large social movement, but are not allowed to crowd the factors less immediately related to the school. Froebel, as is not uncommonly the case with German writers, seems neglected to Americans, who make so much more of his influence. Significant new developments, such as Dr. Lietz's "Landerziehungsheime," and the work of Dr. Kerschensteiner at Munich, are related to the general trend.

An excellent portrait of the author appears as a frontispiece. A tribute to him is written by Dr. Münch. There is a list of good references relating to each book. Unfortunately there is no index. Some of the material in the third book (1650-1800) appeared in volume XXIII of the *Forum*.

Syllabus of the History of Education. By WILLIAM J. TAYLOR. Boston: D. C. Heath & Co., 1909. Pp. ix+147. \$1.00.

Dr. Taylor's experience with classes in the history of education at Yale and at the Brooklyn Training School has produced an outline of the subject intended to be "an adjunct to reading and an aid to logical organization." The period of ancient history has twenty-seven pages, mediaeval history eleven, and modern times sixty pages. In this latter division are, among others, sections on "Contemporary Educational Theory," "School Organization," "National School Systems," and "Education in the United States." Appendices contain summaries of the principal influences in education beginning with the Renaissance and in the educational development of New York State, and also outlines of six modern educational classics from Montaigne to Spencer. There are brief indices of titles, names, and subjects. The syllabus will help many teachers to make better use of the growing material in the history of education. It is possible also that it will lend itself somewhat too well to the practices of those students who have examinations to prepare for.

A Forward Step for the Democracy of Tomorrow. By WILLIAM THUM. Boston: The Twentieth Century Co., 1910. Pp. vii+235.

In the almost overwhelming supply of printed material upon educational subjects the ordinary school man is apt to overlook much that he needs to aid him in his present problems. We shall soon be obliged to depend for help upon bureaus of methods, materials, and references, such as that contemplated in the department of education of one of our leading state universities.

This book of Mr. Thum's would have been counted one of B. O. Flower's dreams, a few years ago; today several parts of it are in operation in Cincinnati, Chicago, and other cities. It is not made clear in the text whether the

author is a prophet or whether he has hurried in to help shape present tendencies. His writing depends upon the following convictions:

First, that it is of the utmost importance that the average man, especially the laborer, should appreciate the value of the future high school; second, that further ethical, political, and industrial progress depends more upon the high schools, greatly increased in number and improved in efficiency, than upon any other one thing; third, that this increase in size and improvement in quality depends upon provision being made to supply those who would be self-supporting students with remunerative and wisely selected work; fourth, that the church could strike at evil in no better way than by directing its main effort toward furthering the interests of the public schools.

The central problem of this book, whether approached from the side of the necessity for self-support or from the side of the educative value of productive labor, is certain to receive increasing attention. Upon a reasonable combination of these two aspects several important advances in education will wait.

Mr. Thum's plans for public-works and manufacturing-works high schools have serious defects, and are largely dependent for their first success upon careful selection of the more fit among the students. The problem of the period between fourteen and sixteen years of age, so well stated by the Massachusetts Commission, is not sufficiently taken into account by him. On the whole, however, there is considerable suggestiveness in the plans, and they deserve to be read in order to help school men to be ready for changes in the relation of school and industry for which many of them are ill prepared. Mr. Thum's plans will probably not be carried out, but we may have to meet reorganizations as little like our present forms as his are.

FRANK A. MANNY

KALAMAZOO, MICHIGAN

Social Development and Education. By M. V. O'SHEA. Boston: Houghton Mifflin Co., 1909. Pp. xiv+561. \$2.00.

Professor O'Shea divides his rather bulky volume into two parts: (1) "The Genesis and Developmental Course of Typical Social Attitudes," and (2) "Social Education." In the first part he sets out "to describe the typical attitudes which the child tends to assume toward the persons with whom he comes into contact, . . . to explain these attitudes in view of certain fundamental principles of mental development, . . . and to trace the changes in the child's adjustments to people which seem normally to occur in the process of development" . . . (p. iii). In the second part he undertakes "certain phases of the interminable task of outlining a plan and method of education designed to make the individual socially efficient" (p. iii). In carrying out this rather large undertaking the author relies upon data obtained chiefly from his own observations and studies of individual children and groups and from similar studies furnished him by friends.

It may be noted in passing that one of the chief merits of the book is undoubtedly due to this method. I refer to the fulness of concrete details, the lively illustrative incidents, the typical and illuminating examples of the vari-

ous characteristics and periods discussed. There is evidence of full, intimate, and long-continued observation of individuals and of groups. This method, the reviewer believes, has resulted in a more accurate and a truer characterization of the child's development, and saner and safer conclusions and deductions therefrom than result from the use of the questionnaire method as shown, for example, in the treatment of the same subject in Hall's *Adolescence*. O'Shea's data seem less extreme and unusual with fewer striking antitheses and contradictions. One cannot help feeling that he is describing the normal typical development, while Hall's conclusions seem to refer rather to the abnormal or at least the extreme cases comprising the highest or lowest individuals in the group—individuals that inevitably figure with undue prominence when the ordinary questionnaire method furnishes the data.

In pursuance of his plan the author treats in successive chapters of the following typical social attitudes: Sociability, communication, duty, justice, respect, docility, resentment, and aggression; closing the first part with a chapter on social types.

Only the briefest reference can be made to the full, concrete, and variously illustrated discussion of these topics.

Sociability, the subject of chap. i, is traced from its more or less instinctive beginning in the third month, through the different stages of development in infancy, childhood, and adolescence. Chief among its earlier causes is the ability of the other person to "do things." Social distinctions on the basis of class, wealth, or dress are not common among children, only developing with adolescence, and then largely through encouragement from adults, and coming earlier and more noticeably with girls than with boys.

In the discussion of communication (chap. ii), similar stages of development are traced out both with regard to what is communicated at each age and the forms, purposes, and effects of the communicating tendency.

In the third chapter, on *duty*, it is only after twenty-two pages devoted to a discussion of the development of the consciousness of self and of other selves that the "sense of duty" is even specifically mentioned, and then it is discussed in only a few pages, giving way shortly to some concluding general observations on the child's religious development and instruction. The question naturally arises why such important topics as the development of the consciousness of self and of other selves, of the accompanying feelings and actions, and of the conflicts that arise between them, should not be accorded independent treatment, but should instead be discussed as incidental to such a topic as duty. Surely such development involves other factors and has other results besides the sense of duty; while, on the other hand, duty would seem to involve something more than one's relation to other selves.

In discussing *justice* (chap. iv) the author first shows how it develops as a result of activities within the group, how it is primarily an attitude assumed only toward one's fellows in the group, and how it involves, further, a gradually clarified property sense, a slowly evolved appreciation of motive as influencing rightness and wrongness, and a late development of the feeling of responsibility.

Chapter v deals with *respect*, which is characterized as a "restrained appreciative attitude," and discussed as revealed in varying attitudes toward elders, superiors, and "conventions." Self-respect is fully treated, and is shown to

develop *pari passu* with respect for others. The differing attitudes of the child and adolescent toward his "reputation," and the nature and effects, especially in the moral sphere, of the loss of self-respect, as well as the attitudes of shame and humiliation, are all described and illustrated.

Docility is next discussed in chap. vi. This attitude is revealed toward those who can teach the child how "to do things," and, as a rule, only toward the dynamic and the practical instruction of the school; it is not readily assumed toward "conventions," nor normally toward the wisdom and ethical instruction of elders, nor toward the intellectual work of the school, at least not before adolescence. Professor O'Shea says that "probably the majority of the pupils in any ordinary school, as at present conducted, would be truants if they dared to be" (p. 151).

In chap. vii various forms of *resentment* are treated, such as anger, rage, indignation, hatred, jealousy; and their expressions, causes, functions, and development are described.

The closely related attitude of *aggression* is discussed in the succeeding chapter, as exhibited in such activities as retaliation, fighting, verbal disputing, teasing, "calling names," and the like.

A description of various *social types*, due to individual variations in the strength of the different attitudes previously discussed, concludes Part I.

In looking over the whole of this first part, the reviewer is impressed with the need of greater clearness, uniformity, and consistency in the use of terms. It would seem desirable, especially in a psychological treatise, to distinguish clearly between such distinctly different things as the impulses, instinctive and otherwise, which lie at the basis of social phenomena, the emotions which accompany them, and the ideas or conceptions which are gradually crystalized or precipitated from them. The difficulties here are, no doubt, largely inherent in the subject itself, and the fault is due in part to the newness of the subject, and is, furthermore, not peculiar to Professor O'Shea's book.

Part II, "Social Education," opens with a very general discussion of the function of social education from a national standpoint. This function is stated to be "to so train each oncoming generation that the nation may continue to grow in strength, stability, and efficiency" (p. 230). We are reaching a crucial period in our national history, "when the struggle for existence or for the attainment of ideals begins to grow less, and leisure and luxury increase." The chief problem of education, therefore, is to avert this degenerative process by rightly developing aesthetic, intellectual, altruistic, and industrial ideals and interests and individual initiative and efficiency. These generalizations, while not perhaps platitudinous, seem somewhat unrelated to the preceding exposition or the succeeding suggestions for social education.

Chap. xi treats of *educative social experiences*, and shows how the child needs large and vital experiences in numerous typical social situations in order to attain to the supremely important social efficiency. Here we have an excellent criticism of our all-too static school training, and valuable suggestions for vitalizing instruction and utilizing social relations, especially in moral training.

Then follow chapters on the *critical period*, *co-operation in group education*, *problems of training*, *methods of correction*, *suggestion*, and *imitation*. A good bibliography of some 135 titles is appended. The last section of the book,

covering some 115 pages, consists of exercises and problems for the student, classified according to chapter, and numbering almost seven hundred.

Just what "the critical period" is the reader may have difficulty in deciding, since it is nowhere specifically stated. From the references to education in the home and by governesses, the phrase seems to refer to the period of childhood up to adolescence, or perhaps only to the first half of that period. In discussing *group education* Professor O'Shea properly emphasizes the influence exerted by the group upon its members, the significance and value of leadership, play, rivalry, and competition, as well as of group loyalty. *The problems of training* cover a wide variety of topics among which is that of the qualifications of a successful trainer and teacher.

Imitation, which bulks so large in many treatises on social psychology and education, is left to the last and occupies a relatively small place in the book. On the other hand, such topics as corporal punishment, which at least is not peculiarly a matter of social education, are given considerable attention.

On the whole the book is well written and extremely suggestive, containing much of great value to teachers and parents as well as to students of education. Every chapter gives evidence of extensive and accurate observation of child life, keen psychological analysis of child activities, and, what is more unusual, sympathetic insight. The shortcomings on the other hand, are largely those of the subject, due to its newness and to the lack of agreement among students as to the proper limits of the field. *Social Development and Education* is undoubtedly the best book that has yet appeared in its field, at least in English, and, whether better books appear later or not, it will possess a permanent value on account of its psychological analysis and its practical and sane discussions of the problems of social education.

E. E. RALL

THE UNIVERSITY OF TEXAS

English Composition in Theory and Practice. By HENRY SEIDEL CANBY, FREDERICK ERASTUS PIERCE, HENRY NOBLE MACCRACKEN, ALFRED ARUNDEL MAY, AND THOMAS GODDARD WRIGHT. New York: Macmillan, 1909. Pp. xii+404. \$1.25.

Study Book in English Literature. By E. R. HOOKER. Boston: D. C. Heath & Co., 1910. Pp. xxvi+324. \$1.00.

Theme-Book in English Composition. By ALFRED M. HITCHCOCK. New York: Henry Holt & Co., 1910. Pp. xii+119. \$0.50.

Selections from the Poems and Plays of Robert Browning. By MYRA REYNOLDS. Chicago: Scott, Foresman & Co., 1909. Pp. 425. \$0.40.

One of the interesting problems concerning English composition is coming to be the differentiation between high-school and college courses. The new book from the Sheffield Scientific School is an excellent illustration of the present uncertainty in this regard. Published without assignment, in title, preface, or introduction, to any kind of school, it is presumably intended for college work. Yet the material is almost entirely that which is useful in the

years preceding, and the brief and simple exposition is within the comprehension of everyone.

The plan of the book, especially since the authors claim originality for little else, is significant. After an introduction in which the fundamental importance of "straight thinking" is pointed out, Part I consistently is a full treatment of exposition, occupying nearly half the book. The whole composition, the paragraph, the sentence, and the word are taken up in order, the treatment of the first three consisting principally of a discussion of the requirements of unity, coherence, and emphasis in each case. Part II takes up argumentation, with excellent instruction in the writing of briefs. Parts III and IV deal with description and narrative. There are also eight short, practical appendices, one of which gives exercises in sentence structure. The most striking feature of the book is probably the remarkable collection of examples, both finely illustrative and of great interest in themselves, which compose the greater part of the volume. The style, in general effective, is what the authors might presumably call up to date—conversational to the point of carelessness, sometimes extending to statements which might well be more exact. "The reader's time is money and must not be wasted"; "Unity consists merely in 'sticking to your subject,' in having one thing to say and saying it without rambling over all creation"; "Coherence means merely taking things up in a clear order; or, to use the words of the proverb, *not putting your cart before your horse.*"

In spite of its merits, the book is somewhat unfitted for high-school use by its sharp separation of the four kinds of composition, and perhaps by the comparative difficulty of some of the illustrations. For older students, the limitation of doctrine to the fundamental principles, the logical, sound arrangement, the clear and brief exposition, and the mass of excellent illustration should make this a most successful textbook.

It is possible even yet, apparently, to write a new kind of book for use in the teaching of English. The *Study Book in English Literature* is fairly described by its title. It is a "comprehensive outline of work frankly based on the inductive method." Excluding all history of literature and criticism, it gives "assignments of reading, bibliographies, topics for study, and lists of essay subjects," all of which, as truthfully related in the preface, require great labor of the teacher who himself prepares them. There are also notes for the teacher, full chronological tables for different centuries, and a "literary map." The time covered extends from Chaucer to the end of the Romantic period.

One can but admire the industry, ingenuity, and scholarship displayed in the volume. The mass of reading contained in and directed by it is enormous, and the quality sometimes very difficult; certainly anyone who has completed the study outlined by this "study book" must have all his vessels brimming full. The thought of the high-school boy in such a situation is one which is likely to inspire in his teacher an unseemly mirth. Further light on the relation of the book to high-school work may be shed by two or three theme-subjects, taken at random: "Write a letter from Wootton to Scudamore, introducing Milton, and describing his character and attainments"; "An imitation of the style of Johnson," on—among other subjects—criticism, or style. This in spite of the fact that the book is intended for high schools, private schools, and normal schools, as well as colleges, and for individual students. It is to be feared that even in the

university the composition teachers of today will not take up enthusiastically Mr. Hooker's idea of theme-subjects. With all subtractions made, however, the remainder is a book which is invaluable. The work is so full in its information, so ingenious and suggestive in its questions, so sound in its application of the inductive method, that it can hardly fail to assist the teacher greatly, and may well take his place for the student who must work alone. It is only necessary to make the selection which the author no doubt intends, and indeed even suggests, to prove the volume of the greatest value.

The youngest member of the family of Hitchcock composition books shows how far we have come in the teaching of the subject. It consists of 105 exercises in oral and written composition, arranged in twelve groups, with brief and simple directions before each group, and an appendix of practical precepts at the close of the volume. Some teachers may feel that since the body of information now considered valuable is so small it might well be given more completely and systematically in connection with the exercises, and so do away with any other textbook. Others may question the wisdom of putting the exercises under the titles of the various forms of prose. It is to be noted, too, that the book, somewhat after the method of the French schools, treats the work in composition frankly as exercises, in which the pupil's enthusiasm is to be inspired largely by his desire to possess a certain ability at a more or less remote period. But this method is an immense gain over the past, it has produced excellent results, and since it is based on truth it can never be entirely abandoned. As to the classification, the author urges the use of all forms of composition in each year. The simple directness of attack and the wealth of interesting material are admirable.

Even with full allowance for the different amounts of teaching experience and of personal courage among editors, selections from Browning for high-school use cannot vary very greatly. In this respect the Browning volume of the Lake English Classics is distinguished principally by the inclusion of the entire play of *Pippa Passes*. The introduction has the charm one would expect, and the life of Browning there given can hardly fail to turn the pupil toward the poems with a strong and impelling interest.

JOHN MAXWELL CROWE

THE UNIVERSITY HIGH SCHOOL
THE UNIVERSITY OF CHICAGO

A History of the Teaching of Elementary Geometry. By ALVA WALKER STAMPER. (Columbia University Contributions to Education. Teachers College Series, No. 23.) New York: Columbia University, 1909. Pp. x+163. \$1.50.

This very timely book discusses present-day problems in the teaching of elementary geometry in the light obtained from a history of the teaching of that subject.

Assuming, first, that the way in which the subject-matter of geometry has been developed by the race offers valuable suggestions as to the way it should be taught to the growing mind, and, second, that the present practice and past experience in the teaching of geometry in other countries has value for us,

the author comes to the following conclusions, among others, bearing on present-day problems: (1) The mathematical subjects should not be taught in isolation from one another. (2) Geometry should precede algebra. (3) Trigonometry should be begun before plane geometry is finished. (4) A closer correlation between the teaching of mathematics and science is desirable. (5) Inductive geometry should precede and to a certain extent accompany the deductive study. (6) The teaching of geometry should have an experimental character. (7) The race preceded the study of logical geometry by the practical. (8) The class hour should be a time for investigation rather than for the "hearing" of lessons. (9) The best features of the individual and of the class methods should be maintained. (10) There is historic precedent in assuming self-evident theorems and such as require a very high grade of reasoning.

A comprehensive treatment is given of the teaching of geometry from the rise of the Christian schools to the present time. For this period much of the material is obtained from Professor David Eugene Smith's collection of early printed books. The present-day teaching of geometry in thirteen European countries is also described.

The book was submitted as a thesis for the degree of Doctor of Philosophy at Columbia University. It is distinctly an effort to bring the history of education into the service of those who are today attempting to solve certain definite educational problems, and as such is a type of work which might be done with great profit for other departments of teaching.

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Bibliotheca Romanica, Bibliothèque française, Bibliotèca italiana, Biblioteca española, Biblioteca Portuguesa. Herausgegeben von G. GRÖBER. Strassburg: Heitz & Mündel. Jeder Nummer 40 Pfennige.

The first one hundred numbers of the series having now appeared, the moment seems fitting to indicate the aims and scope of this noteworthy undertaking. The general editor, Professor Gröber, is the well-known founder of the *Zeitschrift für Romanische Philologie* and editor of the indispensable *Grundriss*. The aim is to give, in correct and readable form, the texts which form the contribution of the modern Latin nations to the *Weltliteratur*. The type and paper are good, the introductions will often repay the attention of specialists (see, for example, the excellent bibliographical essay prefixed to Balzac's *Eugénie Grandet*, or the genealogical researches made by the editor of Strozzi's *Madrigali*) while the low price of ten cents a number is certainly remarkable.

Not a few of these texts are made accessible in cheap form for the first time, as will appear from the following descriptive lists:

FRENCH: *La Chanson de Roland d'après le manuscrit d'Oxford*, ed. Gröber, with glossary; *Œuvres de Maître François Villon*, ed. Schneegans, with glossary; *Maître Pierre Pathelin*, ed. Schneegans, with glossary; *Œuvres de Pierre Corneille*, five plays; *Théâtre de Molière*, three plays; Boileau, *L'art poétique*, ed. Hæffner; Racine, *Athalie*; Descartes, *Discours de la méthode*; Pascal, *Les provinciales*, ed. P. A. Becker; Beaumarchais, *Le Barbier de Séville*, ed. Gröber; prévost, *Manon Lescant*; Voltaire, *Zadig*; Restif de la Bretonne, *L'an 2000*;

Lamartine, *Premières méditations poétiques*; Musset, five of the *Comédies et proverbes*, also the *Premières poésies*; Chateaubriand, *Atala*, ed. Schneegans; H. de Balzac, *Eugénie Grandet* and *Le Cabinet des Antiques*; Claude Tillier, *Mon Oncle Benjamin*, a work which, it appears, has proved remarkably popular in the Low Countries and in Germany.

ITALIAN: Brunetto Latino, *Il tesoretto e il favolello*, ed. Wiese; Dante, *Divina commedia*, ed. Gröber (Witte's text with the variants of Scartazzini and E. Moore); Petrarca, the *Trionfi* and the *Rime*, ed. Gröber; Baccaccio, *Decameron*, the text of Fanfani; *Cento novelle antiche*, ed. Sicardi; Leopardi's *Canti* and *Pensieri*; Giovan Battista Strozzi, *Madrigali*, ed. Sorrento.

SPANISH: Calderon, *La vida es sueño*, ed. Gröber; *El mágico prodigioso*, ed. Wurzbach; Guillem de Castro, *Las mocedades del Cid* I, II; Cervantes, *Cinco novelas ejemplares*.

PORTUGUESE: Camoens, *Os Lusíadas*, complete, with an excellent introduction by Carolina Michaelis de Vasconcellos.

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BOOKS RECEIVED

EDUCATION

- United States Bureau of Education, Bulletins 1910. No. 2, Whole Number 438: *State School Systems, III: Legislation and Judicial Decisions Relating to Public Education, October 1, 1908, to October 1, 1909.* By EDWARD C. ELLIOTT. Pp. 305. No. 3, Whole Number 439: *List of Publications of the United States Bureau of Education, 1867-1910.* Pp. 55. Washington: Government Printing Office, 1910.
- Educational Psychology.* By EDWARD L. THORNDIKE. Second Edition, Revised and Enlarged. New York: Teachers College, Columbia University, 1910. Pp. iv+248. Illustrated. \$1.50 postpaid.
- Teachers College, Columbia University, Contributions to Education. No. 30, *Registration of City School Children: A Consideration of the Subject of the City School Census.* By JOHN DEARLING HANEY. Pp. 156. No. 31, *The Training of Elementary School Teachers in Germany.* By I. L. KANDEL. Pp. vii+137. No. 32, *The Training of Teachers in England and Wales.* By PETER SANDIFORD. Pp. xiv+168. No. 33, *The Conflict of Naturalism and Humanism.* By WILLYSTINE GOODSSELL. Pp. vii+183. New York: Teachers College, Columbia University, 1910. \$1.50 each.
- Riverside Educational Monographs. Edited by HENRY SUZZALLO. *The Teacher's Philosophy In and Out of School.* By WILLIAM DEWITT HYDE. Pp. xv+88. *The Ideal Teacher.* By GEORGE HERBERT PALMER. Pp. v+32. *The Problem of Vocational Education.* By DAVID SNEDDEN. Pp. vii+86. Boston: Houghton Mifflin Co., 1910. \$0.35 each.
- Proceedings of the Third Annual Playground Congress, Pittsburgh, May 11-14, 1909, and Year Book, 1909.* New York: The Playground Association of America, 1910. Pp. xv+472+85.
- Report of the Committee on the Place of Industries in Public Education, to the National Council of Education, July 1, 1910.* Published by the National Education Association (Irwin Shepard, Secretary, Winona, Minnesota), 1910. Pp. iv+123. \$0.15.
- A Descriptive List of Trade and Industrial Schools in the United States.* Prepared by EDWARD H. REISNER. (National Society for the Promotion of Industrial Education, Bulletin No. 11.) New York: National Society for the Promotion of Industrial Education, 1910. Pp. 128.
- Report of the Committee of Ten on the Relation of Industrial Training to the General System of Education in the United States.* New York: National Society for the Promotion of Industrial Education, 1910. Pp. 16.
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- Report for the Fifth Fiscal Year of the National Association for the Study and Education of Exceptional Children.* Plainfield, N.J., 1910. Pp. 26.

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High School English. Book One. By A. R. BRUBACHER AND DOROTHY E. SNYDER. New York: Charles E. Merrill Co., 1910. Pp. xx+355. \$1.00.

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The Iliad of Homer. Translated into English Hexameter Verse by PRENTISS CUMMINGS. *An abridgment which includes all the main story and the most celebrated passages*. In two volumes. Boston: Little, Brown & Co., 1910. Pp. xlv+529. \$3.00 net.

Questions on Shakespeare. By ALBERT H. TOLMAN. Part I, *Introductory*. Pp. xv+215. \$0.81. Part II, *The First Histories, Poems, Comedies*. Pp. x+354. \$1.09. Chicago: The University of Chicago Press, 1910.

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1910. Pp. 431+120. With maps and illustrations. (Additional paper text supplied free, for recitation use, with each cloth-bound book.)

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CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS¹

IRENE WARREN

Librarian, School of Education, The University of Chicago

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- ELLIS, DAVID A. Decade of school administration in Boston. *New Eng. Mag.* 42:521-24. (Jl. '10.)
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- HOPKINS, MARY D. An American schoolgirl in Germany. *Atlan.* 106:359-67. (S. '10.)
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- McKEEVER, WILLIAM A. The moving picture. *Good Housekeep.* 51:184-85. (Ag. '10.)

¹ Abbreviations.—*Amer. Phys. Educa. Rev.*, American Physical Educational Review; *Atlan.*, Atlantic Monthly; *Good Housekeep.*, Good Housekeeping; *New Eng. Mag.*, New England Magazine; *Pedagog. Sem.*, Pedagogical Seminary; *Pop. Sci. Mo.*, Popular Science Monthly.

- MAGNI, JOHN A. Department of child linguistics. *Pedagog. Sem.* 17: 213-18. (Je. '10.)
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- WELD, HARRY P. The mechanism of the voice and its hygiene. *Pedagog. Sem.* 17:143-59. (Je. '10.)
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